# GLEANINGS IN BEE CULTURE

OCTOBER 1982

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## COVER STORY

The "bee doctors" of the Beltsville, Maryland Biovenvironmental Bee Laboratory examine dead bees and samples of comb that come to the lab from many parts of the country. For more information about the diagnostic service see "Beltsville 'Bee Doctors' Run Diagnostic Clinic" in this issue.


October 1982 (ISSN 0017-114X) Vol. 110, No. 10
Created to Help Beekeepers Succeed
109 Years Continuous Publication by the Same Organization

CONTENTS

# Projects A Small-Scale Operator Might Attempt — Part II

By GRANT MORSE, Ph.D.
Saugerties, NY

### Making up a Nucleus

SOME COMMERICAL BEEKEEPERS believe in the value of nuclei so much that they somehow find time to make them up on occasion. A small scale operator usually finds such an activity not only profitable but fascinating.

Commerical operators make up nuclei for different reasons and purposes. One reason is to use the equipment of a colony that has been discovered early in the year to have newly built queen cells. Such a unit is difficult to keep intact without its continuing to build cells and go on to swarming.

In such an instance the beekeeper often finds it profitable to break up a colony and make up nuclei, using its queen cells, frames, bees, and stores. How many he will make up from any one such unit depends upon his needs. Such nuclei, if started early, often build up enough to carry themselves through the following winter. If not, frames of honey and pollen can be added in the fall. The following spring such nuclei can be good honey producing units. Some nuclei formed in this fashion will be put to use soon after formation to strengthen weak colonies or those with failing queens.

Some commercial beekeepers annually buy queens and use them to head nuclei either for increase or for emergency requeening purposes. Introducing a queen to an established colony that needs requeening is perhaps easiest done by the nucleus method. The nucleus is placed over the unit needing requeening, using a sheet of perforated newspaper to reduce conflict in the initial stages. It is recommended that such queens be marked so that their identity may be known when there is doubt as to whether they were accepted.

A small scale operator is often faced with challenges similar to those just described. In his case, he usually finds it profitable to feed the young nucleus sugar syrup, thus accelerating its advancement and reducing the likelihood of possible need to feed it in the fall.

I recommend to beginners that they do not make their nuclei too large at the start. Less is consequently lost in case of a failure for any reason. More strength can be added later after a unit has proven that it is going to succeed. Three or four, or, at the most, five frames are adequate at the beginning. Commercial operators often can't afford the time to do it this way. They commonly use 9-10 frames.

### Producing Comb Honey

Most commercial beekeepers find it pays them better to specialize in the production of liquid honey rather than comb honey.

There are several reasons: Chiefly, liquid honey is easier and cheaper to produce; its production usually encourages less swarming; the product is less vulnerable to damage; its shelf life is longer. Also, most commercial beekeepers find it better to specialize and thereby avoid variation in management of colonies.

But a small scale operator has several inducements for producing at least part of his crop in the form of comb honey: There is currently a good demand for comb honey; it brings an excellent price; it is an extremely attractive item that can give its producer much satisfaction in having secured it; it does not involve the extraction process; and it is a challenge to the small scale beekeeper who is brave enough to try it.

There are four classifications of comb honey: section honey (in wooden frames); round sections (honey in round sections in plastic containers); chunk honey (to be placed in glass jars of liquid honey); and cut comb honey (usually marketed in transparent plastic boxes). Of the four, cut comb and chunk honey are the easiest to produce.

This is because they are produced in shallow frames on thin foundation in colonies that can be operated more in the fashion in which liquid honey is produced than under the extremely crowded conditions under which section honey and round sections are produced. Both section honey and round sections must have the entire comb completely filled and capped to qualify for ready and acceptable sale. This is not true to the same degree for cut comb honey or chunk honey. To accomplish such a degree of completion, a colony must usually be confined to one hive body of 9-10 frames. Doing so encourages swarming which in turn necessitates an examination of the brood nest by the beekeeper every 7-8 days, and the removal of queen cells when they are found.

The production of chunk honey or cut comb honey is usually carried out over colonies made up of 1½ hive bodies, and necessitates less crowding in the areas where the chunk or cut comb honey is produced. The practice of using a half depth super over the brood nest area is followed commonly for the purpose of discouraging the carrying of pollen by the workers into the area where the honey is being made.

When the production season is over, the honey in the half depth super can be extracted, or used for winter stores. In most geographical areas a colony thus operated will winter on the stores in the 1½ hive body set-up.

Cut comb honey is comb honey normally produced in shallow frames, cut into sections with a sharp hot knife to fit the size of plastic box in which they are marketed. It needs to be allowed to drain after being cut. These boxes are transparent and so reveal the contents of the container rather clearly. The boxes afford protection to the product from leakage, breakage, and petty pilferage. Cut comb honey retains all the qualities offered by section honey or round sections with fewer of the headaches associated with their production.

### Establishing an Out-Yard

If a small scale operator has but

*(Continued on page 540)*

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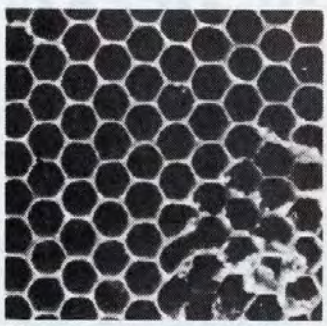

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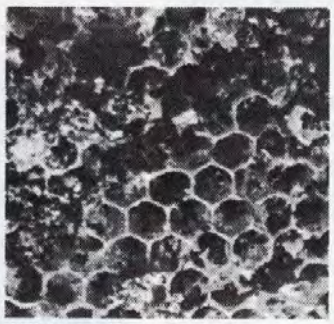

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## Projects A Small-Scale Operator Might Attempt — Part II

*(Continued from page 538)*

one yard of bees, and if he has an inclination to believe he might some day like to become a commercial operator on a large scale, he might well try giving himself the experience of operating an out-yard, even it is only a small one. Incidentally, yards with small numbers of colonies usually produce more per colony than yards with large numbers.

Bee yards should be at least two miles apart — and this includes especially the yards of other individuals. They should be accessible by truck but with adequate obstruction to intrusion by would-be thieves. It is advisable to keep the hives out of sight of passers-by, but visible, if possible, by the people living near by who are serving as guards for you.

Yards should face south of southeast, and have wind protection on the other three sides. A clean water source should be not too distant so that the bees do not become a nuisance at near-by swimming pools or other public or private facilities. Good nectar sources are of primary importance.

### Avoiding Swarming

A beginner or small scale operator can afford usually to follow swarm prevention practices that a commercial operator may not believe he can undertake. It is a subject the beekeeper should study, and then try to follow swarm prevention methods that work for him.

The causes of swarming are a bit complex. Swarming most usually takes place before or shortly after the chief nectar flow occurs. Any operator who is too cautious, or too negligent, to examine his colonies during the swarming season, and take preventive measures, is almost certain to lose most of his working forces.

Honeybees swarm when there is promise of success both for the swarm and for the bees left behind in the parent colony. One common element prevailing when swarming occurs is the presence of plenty of brood. This is probably not the chief cause of swarming, but it is one of the chief conditions present when swarming occurs.

Therefore, reducing the number of frames of brood during the swarming season is a very positive deterrent. It can be accomplished by spreading the brood, or dividing the brood, or removing part of the brood.

Spreading the brood is often accomplished by Demareeing, or setting up a two-queen system. Dividing the brood or removing it can be accomplished by giving some of it to nuclei, or weaker colonies. But whatever the method, the operator needs to know what swarming is all about. Then he must find a preventive method(s) that work for him.

Let me conclude by saying that understanding of swarming is the first essential. A few years back I sold a yard of bees to a novice. I suggested that he reverse his colonies in the spring.

When I visited him in May I found he had followed inadequate wintering practices so that many of the colonies were very weak. Yet he had reversed every one — not to the best advantage in many cases. First, get understanding.

# Traveling Exhibit On Beekeeping

**The honey bee exhibit truck (18' van box also used to haul packages and nucs) at the Haddam Neck, Ct. agricultural fair. One fair goer appears to have been sampling some honey.**

Bill Gerdsen and family of the Bard's Farm, Chaplin, Ct., provide and educational exhibit to agricultural fairs in Eastern Connecticut. Part of the exhibit is demonstration of a beard of bees.

Bill says, "The exhibit gives us an excellent opportunity to meet beekeepers of all ages, to answer many questions by the general public, increase the use of honey, and to bring home the message about bee kill by the indiscriminate use of pesticide."

# Bees and Gardens

WHEN THE WORD "gardens" is mentioned there may be one of several images come to mind depending upon your range of interests. One person may think of a garden consisting of vegetables only, another person thinks of flowers or herbs only, while most gardeners consider both vegetables and flowers as being a normal garden complement perhaps with some shrubs, small fruits and tree fruits included. Since I have covered the subjects of small fruit, tree fruit and vegetables to a limited extent in regard to their relationship with bees it is time to move on to another phase of gardening and beekeeping, the flowers and other ornamental plants.

In connection with the ornamental plants we can dwell on another aspect of gardening, planting for the purpose of furnishing nectar and pollen sources for your bees; but let us defer this discussion until we review some of the interrelationships between bees and the herbaceous and woody plants found in and around the garden. Later we will talk about some of the wildflowers that may be grown in the home garden that would be of interest to bees and perhaps also the status of wildflowers in their natural surroundings, since, after all, are not our unspoiled woods and fields "natural" gardens which we can enjoy without giving them much care?

As with the vegetables of the garden, we can conveniently divide the flowering plants grown as ornamentals into annuals, biennials and perennials. Annual flowers are those which are sown as seed in the spring, flower and form seed in the same season. Biennials are those planted during one growing season and form seed during the second season of growth. The vegetative phase of the biennial may preserve in the ground over winter or the gardener may store a portion of the plant in a protected place and plant in the spring. From this the seed bearing stalks grow. Biennials die after the second season of growth after producing seed. whereas the perennials continue to grow after the second year. Most perennials reproduce vegetatively and survive year after year without replanting, although top growth may be killed during the winter. It is not uncommon for perennials to produce seed and, of course, will reproduce by this means as well. Examples of annual flowers are: the sunflower, California poppy, cockscomb, nasturtium, common marigold and salvia. The biennial flowers usually take the form of a low ring of leaves the first year and the second year send up a leafy shoot bearing flowers and seeds. The biennials are rather loosely defined among the garden flowers, much depending upon their manner of being grown. An example that could be given is the foxglove. The first year, the plant forms a radical rosette of broad leaves. In the late spring or early summer of the following year the plant bears the leafy spike of flowers, after which the plant dies out. Some well-known examples of perennials are: the shasta daisy, canna, begonia, primrose, oriental poppy and lupine. The list could go on and on. The spring flowers in our woodlands and meadows are mostly perennial herbs, and so are the desert flowers which appear after the rains fall. Interestingly, the distinction between annuals and perennials is sharper in temperate zones than in the tropics and sub tropics because of the interrupted growth period caused by winter.

Various arbitary divisions may be used to differentiate garden flowers and other plants other than seasonal growth habits but they are not of interest or use except to horticulturists or other plant specialists.

The way we distinguish flowers that is in most common usage is by their common names. The classification system used by plant taxonomists is the binomial (latin, scientific or botanical). Flowers have common names which are highly variable. The bachelor's button, for example, is also known as a blue bottle or as a cornflower. The botanical name is unvarying throughout the world; *Centaurea* (for genus) and *cyanus* (for species). To complete the taxonomic classification of a flower it is assigned to a plant family and in addition may be classed as a subdivision of a species. Botanists may carry plant classification additional steps for their purposes.

Many of our garden flowers are near or distant relatives of either native North American or introduced species which have been bred to adapt to our American garden environments. These "domesticated" plants are referred to as cultivars or horticultural varieties, many of which become rather far removed from their wild origin during the generations of breeding. Double flowers, dwarfing, color variations and other unusual growth habits are examples of the plant breeders' art. The garden hyacinths we grow are quite improved over the wild hyacinth (*Camassia scilloides*) sometimes found growing in middle America. The color range is very wide compared to the natural pale blue and the flowering portion of the plant is much larger in proportion to the rest of the plant than is seen in the wild species. People who market flower seeds name these newly developed flowers by a number of methods. Certain roses are patented to protect the exclusive right of the developer to grow these roses for the market. Exotic names may hide the rather humble origins of some of our horticultural flowers.

The relationship between garden flowers and bees is somewhat similar to the relationship between bees and our garden vegetables. Some flowers are insect pollinated and some are wind pollinated; some are receptive to their own pollen (self fertile) while other flowers require pollen carried, by insects or wind, from one flower to another (self sterile) as in cross pollination, to produce seed of the best quality and in abundance. Like beets, carrots, lettuce and radishes you need not have bees visit your garden to enjoy the beauty of marigolds, snapdragons, zinnias and daisys grown from seed. But, again, as in the case of certain vegetables you are often tapping a vast resource of seeds that are bee dependent when you purchase the original seed stock; at least those of you who buy your seed at the seed store or through a seed catalog. Bees enter into the picture as well during the selective breeding processes that produce the superior varieties including hybrids. Here again, is an example of the importance of the honeybee in the process of plant development and seed production which escapes the average person's attention and sometimes even that of the gardener. Of course, many gardeners save flower seeds for replanting the following season. For many of the less

sophisticated garden annuals and, of course, where the perennials are propagated from sections of the parent plant, this system works fine. Honeybees, may or may not be needed for pollination to form the seeds. Bees are frequently seen on salvias, marigolds, snapdragons and zinnias. While the bees are gathering nectar or pollen, or both, an essential pollination service to the flower may be performed by the bees. These visits may, or may not be essential to seed formation; it all depends upon the mode of pollination of that particular flower species. Whether the flower is a hybrid or is an open (the way of Nature) pollinated variety may be one way to determine whether a flower is in need of bee pollinators to produce seed true to the variety. Complicating the procedure of saving your own flower seeds is the degree of hybridization of the flower. In other words, the flower you get the second year after having saved and planted your seed may be somewhat, or even greatly different from the previous year, often inferior, if that flower came from hybrid seed. This is due to the genetic variation which occurs during the normal recombinations of characteristics in inheritance. These variations involve the genes on chromosomes, structural units in the cell nucleus that preserve the plant's individuality from one generation to another.

In any event the presense of bees in your garden is a good omen, whether they are performing an essential pollinating service or not. Honeybees seldom visit roses, for example, in the garden but often visit wild roses. The garden rose, being the product of many thousands or more generations of cultivated plants may no longer have the need of, or the capability, of dispersing pollen or dispensing nectar to bees as does its wild ancestor. Many flowers evolved through many thousands and even millions of years with a dependence on insect pollinators and it was a mutual dependence because the insects were also in need of the pollen and nectar of the flowers. Various parts of the flower apparently developed in response to the need to attract pollinators. The bright colors attract by sight, the fragrances attract by smell and the nectar and pollen furnish sustenance to insect pollinator visitors.

Which garden flowers are the most attractive and useful to honeybees? The following list may help to guide you in garden planting selection if you are also a beekeeper or are called upon for advice. You must remember that many thousands of flowers are needed to yield a noticeable honey surplus, but collectively, gardens planted to bee flowers can make a difference in the productivity of individual hives within flying distance of many gardens.

**Butterfly Weed** (*Ascelpias tuberosa*): An excellent honey plant. 1 to 2 ft. Bright orange flowers. Sow seeds in spring. Milkweed family.

**Spider flower** (*Cleome spinosa*): Good honey plant. Annual. Showy racemes of white or pink flowers. 2-4 ft. Summer blooming. Sow seeds under glass and transplant in spring..

**Purple bergamot** (*Monarda media*): A mint, very attractive to bees. 1-2 ft. Bright red/purple.

**Globe thistle** (*Echinops sphaerecephala*) **or Chapmann honey plant:** A robust perennial with globe-like pale blue flowers. Propogate by division and root cuttings. 3-5 ft.

**California poppy** (*Eschscholzia californica*): A brilliant annual which yields pollen. Sow seeds where plants are to flower in spring. Midsummer blooming.

**Blazing star** (*Liatrus spicata*): Midsummer flowers. 2-3 ft. with spikes of lilac to purple-red flowers. Divide plants in spring in North, autumn in South, or sow seeds under protection.

**Purple loosestrife** (*Lythrum salicaria*): Summer, early fall bloom. Pink, red-purple bloom of spiked flowers. 2-4 ft. Damp places. Propagate by cuttings or divisions in spring or seed. Could become a nuisance weed.

**Crocus** (*Crocus neapolitanus*): Early spring flowering yields pollen. Propagated by division of corms which form at foot of plant in late summer. 6-8 inches.

**Forget-me-not** (*Myosotis sylvatica*): Spring flowering. Blue. Shake seeds from mature plant over prepared seed bed.

**Catnip** (*Nepeta cataria*): A mint with white or violet flowers. Divide clumps to propagate.

**Hollyhock** (*Alcea rosea*): A tall perennial up to 6 ft. Variable colors. Summer blooming. Propagated by seed. Good pollen source.

**Marjoram** (*Origanum vulgare*): A perennial herbal plant which yields nectar.

**Mignonette** (*Reseda odorata*): A delightfully scented annual which lures bees in summer and autumn.

**Phacelia** (*Phacelia tanacetifolia*): Excellent nectar plant. 2-4 ft. Annual with bluish-pink flowers. April blooming in California. Seeds itself freely.

**Rosemary** (*Rosmarinus officinalis*): Bees work for nectar. If protected during winter will live in her garden for years. Delicate blue flowers. Mint family.

**Salvia** (*Salvia splendens*): Highly recommended for beauty and nectar. Bright red. Sow seed under glass and transplant after frost is over.

**Garden sage** (*Salvia spp.*): A strongly aromatic perennial. Blue flowers.

**Pickerel weed** (*Pontederia cordata*): Flowers in terminal spikes. Sky blue. Grow on margins of ponds. Very good for nectar and pollen.

**Sedum** (*Sedum spp.*): Variable in color. Low growing. For borders and rock gardens. propagate by divisions.

**Thyme** (*Tymus spp.*): A garden herb.

**Sunflower** (*Helianthus annuus*): 3-12 ft. Some nectar and pollen. Food for birds.

**Scabious** (*Scabiosa caucasica*): A perennial, about 2 ft. Pale blue. Plant seeds in the spring.

**Bachelor's button** (*Centaurea cyanus*): 1-2 ft. annual. Sow seed in the spring.

Note — The above plants may not all be adaptable to your latitude. Most garden planting guides will give climate zones which define the limits of each species.

Next month and the following I will continue to write about some of the plants which may be planted for nectar and pollen, Continuing with such woody plants as the shrubs and ornamental and forest trees.□

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Dr. Hachiro Shimanuki and his assistant examine and diagnose samples of dead bees at the U.S.D.A. Bioenvironmental Lab in Beltsville, Maryland.

# Beltsville " Bee Doctors" Run Diagnostic Clinic

There's a diagonostic service in Beltsville that's not for your car or your body. It's for sick honeybees.

Nearly 2,000 times a year, scientists at the ARS Bioenvironmental Bee Laboratory diagnose samples of sick bees or disease-infected honeycombs mailed in by beekeepers and apiary inspectors.

This service helps maintain the health of the Nation's honeybees, which are vital to agriculture. Without honeybees for pollination, considerably fewer fruits and vegetables would reach market, and nearly all food, including meat, would be more expensive.

Any industry with an annual investment in goods and services of $12 to $15 billion — the total value of crops pollinated by honeybees — would want to keep a healthy labor force. And so it is with beekeeping.

The "bee doctors" of Beltsville's diagnostic service verify the opinions of bee inspectors at state departments of agriculture or of beekeepers themselves. These entomologists first examine a mailed-in specimen under a microscope. They look for spores of the microorganisms that cause American foulbrood disease, chalkboard disease, sacbrood paralysis disease, and other bee maladies. The scientists also check for symptoms of parasites such as bee "lice," mites, and the larvae of the greater wax moth, which can transform the neat geometry of a honey comb into an unrecognizable mess.

When a disease is found, word is sent to the beekeeper and to the chief apiary inspector of his or her state, who check to make sure that the beekeeper treats the tainted colonies immediately.

At the lab, leftover disease samples are studied to determine if the disease germs in certain geographical areas have developed resistance to the antibiotics that beekeepers depend on to keep their operations healthy.

Samples of diseases or dead bees come to the Beltsville lab from many parts of the country. Thus, the diagnositc service helps entomologists know the distribution of bee diseases. Laboratory chief Hachiro Shimanuki says the service could provide early warning if a serious disease appears to be spreading or if a potentially disastrous foreign disease has entered the country.

Diseases and parasites cost the beekeeping industry millions of dollars each year with the loss of bees and bee equipment. The public also pays a price with the loss of pollination services and the need for inspection services. The cost would undoubtedly be higher without the ARS diagnostic service of Beltsville.

Dr. Hachiro Shimanuki is located at Bioenvironmental Bee Laboratory, Rm. 208, Bldg. 476, Beltsville, MD 20705. — (By Stever Berberich, ARS, Beltsville, MD)

From *Agricultural Research* — July 1981.

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# Monthly HONEY Report

LAWRENCE GOLTZ

**September 10, 1982**

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

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

| Sales of extracted, unprocessed honey to Packers, F.O.B. Producer. Containers Exchanged | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 60 lbs. (per can) White | 42.00 | 32.50 | 34.80 | | 37.00 | 39.50 | 36.00 | 36.00 | 34.00 |
| 60 lbs. (per can) Amber | 42.00 | 29.80 | 32.40 | | 31.20 | 37.50 | 34.20 | 35.00 | 33.50 |
| 55 gal. drum (per lb.) White | .70 | .56 | .56 | .58 | .60 | .60 | .56 | .59 | |
| 55 gal. drum (per lb.) Amber | | .48 | .54 | | .54 | .58 | .50 | .57 | |
| Case lots — Wholesale | | | | | | | | | |
| 1 lb. jar (case of 24) | 28.50 | 24.90 | 25.80 | 25.90 | 25.20 | 25.00 | 24.20 | 25.50 | 24.00 |
| 2 lb. jar (case of 12) | 29.00 | 23.30 | 24.20 | 23.76 | 24.50 | 23.50 | 23.50 | 23.75 | 23.25 |
| 5 lb. jar (case of 6) | 31.00 | 27.80 | 26.25 | 27.50 | 27.50 | 27.50 | 26.80 | 26.50 | 26.20 |
| Retail Honey Prices | | | | | | | | | |
| ½ lb. | .90 | | .90 | .88 | .89 | .90 | .87 | .90 | .97 |
| 12 oz. Squeeze Bottle | 1.35 | 1.19 | 1.50 | 1.22 | 1.45 | 1.35 | 1.42 | 1.35 | 1.39 |
| 1 lb. | 1.50 | 1.39 | 1.50 | 1.43 | 1.50 | 1.55 | 1.52 | 1.59 | 1.60 |
| 2 lb. | 2.70 | 2.59 | 2.85 | 2.59 | 2.89 | 2.60 | 2.59 | 2.62 | 2.89 |
| 2½ lb. | 2.95 | | | | 3.29 | 3.25 | | 3.15 | |
| 3 lb. | 4.00 | | | | 3.79 | 3.85 | 3.79 | 3.95 | 4.09 |
| 4 lb. | 5.00 | 4.95 | | 4.99 | 4.75 | 4.90 | | 5.00 | |
| 5 lb. | 6.25 | | 5.95 | | 5.75 | 5.60 | 5.50 | 5.95 | 5.89 |
| 1 lb. Creamed | | | 1.55 | | 1.59 | | | 1.59 | 1.69 |
| 1 lb. Comb | 1.75 | 1.75 | 2.25 | | 2.05 | 1.85 | 1.79 | 2.00 | |
| Round Plastic Comb | 1.50 | | 1.50 | | 1.75 | 1.50 | 1.60 | | |
| Beeswax (Light) | 2.00 | 1.75 | 1.50 | | 1.90 | 1.80 | 1.60 | 1.90 | 1.90 |
| Beeswax (Dark) | 2.00 | 1.65 | 1.45 | | 1.80 | 1.75 | 1.55 | 1.85 | 1.80 |
| Pollination Fee (Ave. Per Colony) | 25.00 | 18.00 | 27.50 | | 20.00 | 17.50 | 15.00 | | 18.00 |

**Misc. Comments:**

**Region 1**

A bumper crop of over 100 lb. per colony in Connecticut plus promise of a good fall honey flow. Nucs made up in May have averaged 50 lb. surplus. We could have problems selling the crop at a fair price as imports continue to hack away at our profits. Some beekeepers failed to super up in anticipation of this crop. Beekeepers that were ready for a large crop got one. Northern Vermont had a poor crop; Southern half an excellent crop; just the opposite of last year. Areas that are usually low producers had the best crop this year. The good crops came mostly from locust and basswood, while clover areas such as the Champlain Valley produced very little honey. Sales of honey have been slow during summer but should improve. From a bottlers view the support price is making cost of bulk honey too high and retail market will not pay the price; so imported honey is taking over the market. Bees in good condition.


**Region 2**

Maryland is having a good year. Ample rainfall has helped plants produce nectar longer. Pollinating bees producing lima bean honey on Maryland's eastern shore. Demand for local honey very good. Most colonies extremely heavy, even before fall flow. Heavy honey flow from goldenrod and aster in West Virginia. Bees in good condition. Most of New York state is having a good crop. No changes recently in honey prices. A good crop of spring and summer honey being extracted in Pennsylvania, light amber in color with some honey dew. Prospects for fall honey flow are excellent in early September. Honey sales fair.

**Region 3**

Southeastern Wisconsin had a good honey flow in July. August was cooler and wetter than normal and little honey was gathered. A good fall honey flow is possible if weather is right. Wisconsin honey production will run ahead of 1981. Should be about 100 lb. per colony. Ohio honey crop is far ahead of 1981 with some areas getting the best crop in years. Northern Ohio short of rainfall during late summer but affected only the late summer honey flow. Bees populations are excellent. The 1982 honey crop in Illinois is better because it is lower in mositure content. Soybeans yielded later than normal in Illinois. Honey sales good in Indiana. Good quanity of Indiana honey available in bulk. Retail sales good. Drop in beeswax price possibly due to imports. Bees in Indiana have very

*(Continued on page 586)*

# Dorothy Brister Oklahoma's Lady Beekeeper

**Dr. Joseph O. Moffett**
**Cushing, OK**

DOROTHY BRISTER of Caddo, Oklahoma has been operating her 300 colonies since her husband, Mims, passed away in July, 1979. Before that, she had been doing most of the managing of their bees, except for the heavy lifting, since the Bristers started keeping bees more than thirty years ago.

Besides producing honey, Dorothy sells nuclei and pollen. She also packs all her honey and either sells it locally, or distributes it to stores in southeastern Oklahoma.

Between 75 and 100 nuclei are sold each year. Mrs. Brister will sell either a one-story colony or a three-frame nucleus, depending on the wishes of the customer.

**Dorothy Brister is showing the Oklahoma State University Apiculture class one of the nuclei she has recently made. She sells about 75-100 nuclei yearly. The class is taught by Dr. Joseph O. Moffett and Dale Maki each spring semester.**

### Requeens each year.

All the colonies are requeened each spring with Italian queens purchased from the South. Mrs. Brister believes yearly requeening helps her both control swarming and obtain better honey crops. After their arrival from the South, the attendants in the queen cages are released and the queens placed in queen banks in queenless nuclei. This keeps the queens from overheating or becoming chilled. It also calms the queens, and the bees in the nuclei will feed and care for these queens.

The queens are introduced in their shipping cage. Honey is smeared on the cage when the queens are introduced. Mrs. Brister said their colonies had become very cross and difficult to work in the early years when they were letting "nature take its course" in requeening.

**Four queens are left in this queen bank which is kept in a queenless nuclei and transported to outapiaries as needed. This keeps the queens from becoming overheated or chilled, and the bees in the nuclei care for them.**

### Pollen trapped.

She has built and developed her own pollen trap for collecting pollen. Last year 200 pounds of pollen were collected and sold for $8.00 a pound. The pollen is screened through two screens. A large screen lets the pellets through and removes the bigger pieces of trash. A fine screen keeps the pellets from falling through, and removes the small pieces of trash. A small blower is also used to help remove foreign matter from the pollen. Mrs. Brister then cleans and packs the pollen in one pound containers and keeps it in the deep freeze until she sells it.

### Home-made lift used.

Her son, Donald, has made her a home-made lift on a trailer for moving the bees. It operates on batteries.

*(Continued on page 552)*

Orcutt print courtesy of Washington State Game Department
(From Poelker and Hartwell, Black Bear of Washington, 1973)

# GET THE Bear facts

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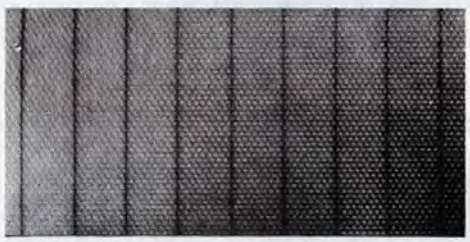

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# Dorothy Brister Oklahoma's Lady Beekeeper

*(Continued from page 550)*

Donald teaches in the Oologah Public Schools (Will Roger's home town). However, he helps her operate the bees on weekends and in the summer. She has a married daughter who lives in Caddo and five grandchildren.

An iron comb spacer is used to evenly space 9-frames in their 10-frame hive bodies.

Mrs. Brister has a small, but efficient, extracting and honey packing plant. After draining the cappings, they are melted in a solar wax extractor.

Her husband used to make all their wooden goods. Now, she buys them unassembled, and then puts them together herself.

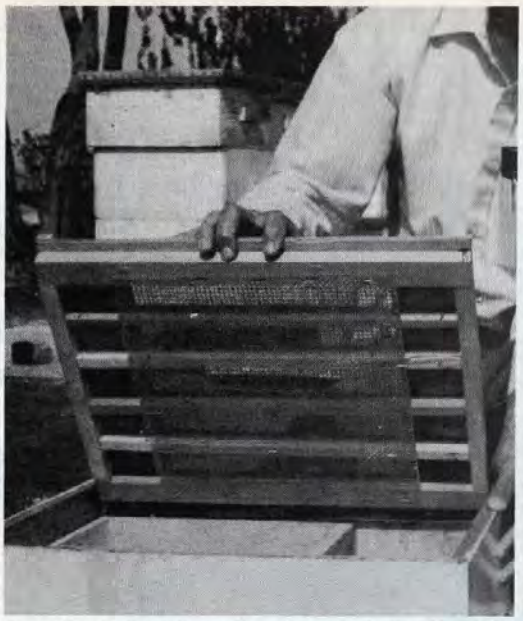
### Lives on ranch.

Mrs. Brister lives on her 150-acre ranch where she keeps her home apiary and also raises beef cattle. Her other apiaries are located within a few miles of Caddo. Most of the surplus honey is produced from milkweed and arrowleaf clover.

### State Historian

Mrs. Brister is a very enthusiastic beekeeper who loves her bees. She is historian for the Oklahoma Beekeepers Association and frequently gives instructional or historical talks at the state meetings. She is also past-president and an active member of the Southeastern Oklahoma Beekeepers Association. □


**Dorothy Brister packs and sells her pollen in one pound cartons. After being cleaned, the pollen is packed and stored in a deep freeze until it is sold.**

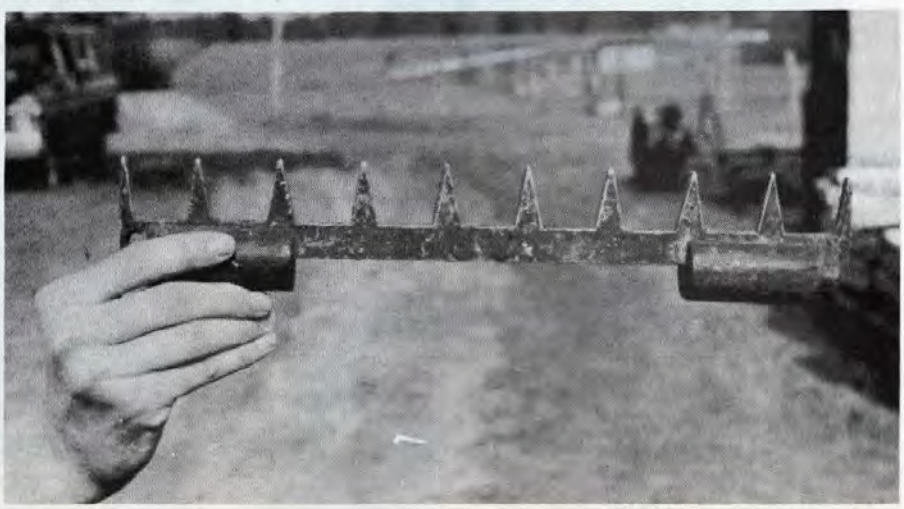


**Dorothy Brister's pollen trap is being held by Conrad Kleinholz during the apiculture class's visit to the Brister ranch. She collects and sells about 200 pounds of pollen yearly.**

**One of the nuclei made by Dorothy Brister in the spring of 1982. She sells between 75 and 100 of these nuclei each year.**

**This battery powered lift was made by Donald Brister to enable his mother to move colonies easily.**

**Dorothy Brister uses this iron frame spacer to space 9-frames in her 10-frame hive bodies.**



# Questions and Answers

**Q. I am a backlot beekeeper in a suburb of Washington, D.C. I have three colonies, one of which is so cross as to constitute a nuisance. As requeening is too much of a risk, I should like quietly to exterminate them and turn their home over to packaged bees, with queen.**

**How do I exterminate without spoiling their stores for either bee or human consumption? R.H., Virginia.**

A. The only chemical available from bee supply stores that is approved for exterminating colonies of bees is Resmethrin® . Honey from the hives in which bees have been killed by using this chemical cannot be used for either human or bee consumption. Combs of wax are contaminated for an undetermined length of time. This makes it imperative that proper disposal be made of the dead bees, frames, combs and honey after using this chemical. Since the usual reason for destroying a colony is because of a diseased condition this does not pose a dilemma, but sometimes there exists other legitimate reasons for having to eliminate colonies such as you have mentioned or where it is impossible to overwinter bees. For disposing of bees without leaving a contamination problem no chemical exists at the present time, at least one which allows the use of the honey and comb after extermination.

I know it may go against the sensitivities of some readers but we realize there are instances when there is no recourse but to eradicate a colony, yet preferring to leave the honey, combs, and hive free of contamination. Depriving a colony of adequate air effectively eliminates a colony as I found out recently in attempting to move several very strong colonies on a hot day. The mass of soggy, dead bees should be removed from the hive immediately.

**Q. In introducing a queen bee, is there anything wrong in putting her on the bottom board and shoving her back in about half way? W.W., West Virginia**

A. While I have heard of using this method of introducing queens through the bottomboard it is a method that I have never tried nor is it one which is recommended above others in most of the bee literature. In my opinion and as a result of experience, I would say that the position of the queen in a cage on the bottom board has risks that not in evidence when the cage is positioned near the top bars in the middle or upper center of the hive bodies. Perhaps the greatest risk is the abadonment by the protective cluster of workers around the queen during cold evenings and mornings. Other than the convenience of placing the queen cage into the entrance I can see no advantages to this position and possibly some serious disadvantages.

Perhaps you have in mind introducing the queen by simply releasing her into the entrance, perhaps using a scent to cover her entry until she is accepted. Some beekeepers practice this method and apparently with success but I would suggest you first try it on a limited scale.

**Q. I am a hobby beekeeper with five hives, three of which are in the garden and two further up on a hill. It is difficult to work the garden area in front of the hives for it being right in the pathway of the bees. I would like to move them up on the hill where the other two hives are. Is it possible to do this without moving them a long distance away and then back? As I have read in some reports I was hoping to do it this fall after taking off the supers and not many bees foraging, like a cold November day. It would be a distance of about 200 yds. and the entrance would be facing east instead of South as as they are now.**

**Also are you familiar with rabbit brush as a nectar source? What is its value? It is wild on the hills here, intermingled with the sage and juniper. A.C., Oregon**

A. If you move the three colonies of bees to their new location 200 yards away I am sure that the foraging bees will find their way back to the hives in the new location, It may confuse some of them for several hours but eventually they will learn the new location. Do this as soon as you have removed the honey. Do not wait until cooler weather arrives.

Rabbit brush yields a dark honey of disgreeable taste according to our reference. Bees work the plant in the fall.

**Q. I have a stand of bees that I split in June.I introduced a queen that I ordered. The queen has a good laying pattern, but they have not built up. The reason it seems is because the last few days or so they have dragged most of the brood out. It is all in the pupa stage from white as cotton to ready to emerge brood, even some of the young emerged bees have been found out in the grass in front of the hive. My question is, if left alone will it clear itself up? Should I order a new queen? I would hate to lose this stand as I am trying to increase. I have 16 stands from original 6 last spring. They all are doing well except for this one. If I could, I would like a lengthy discussion of why they would do this. Is it the queen? Should I give them brood from another stand, or what? D.B.,Tennessee**

A. For one thing I do not know all of the circumstances and secondly your problem may be beyond my experiences. One thing I am fairly sure of is that the dead brood being carried out of the hive is not the result of having a poor queen. I have seen brood carried out of the hive in small numbers due to being chilled in the spring but beyond this I cannot answer. My guess is that the one colony is suffering from a chemical poisoning which was picked up somewhere but of course the others would likely be affected also. Internal colony problems will cause brood to be killed such as impending starvation, a disease or a pest. You need someone, such as an apiary inspector, to examine the colony. I don't know if some genetic problem may be causing brood to be killed, in which case, of course, it may be related to a problem with the queen. Quite likely the problem will clear up but watch for food shortages and queenlessness.

**Q. As an amateur beekeeper, my learning is very incomplete, in spite of my high level of enthusiasm and fascination for this old craft. This year, in order to increase ventilation for my hive, I have pulled the upper hive body back an inch or two, thus exposing the ends of the frames in the lower hive body. What is the effect of rain entering this space? Should I push the upper body back flush with the lower one when strong**

*(Continued on page 556)*

## Questions and Answers

*(Continued from page 554)*

**rains are expected? J.H., Massachusettes**

A. I doubt if there is much harm caused by the rain entering the opening. especially if you have the hive tilted on the stand so that any excess moisture drains out the front entrance. Perhaps it would better to simply place small wooden blocks about ¼ inch thick at each of the front corners between the two hive bodies. This will keep the rain out, yet provide the ventilation you received by staggering the hive bodies. Other means of providing ventilation include a vent in the rim of the inner cover; a hole bored in the front of the upper hive body; or, a wooden rim over the brood nest in which a ventilating port is built.

There are differences of opinion among beekeepers about the need for such ventilating ports during the summer season.There are certainly differences of opinion as to the proper location of these openings. Some say bees are able to create all the ventilation they require through the open bottom board entrance, sometimes deepening the bottom board space to allow additional clustering space. Bees kept in the hot Southwest are seen with only a ⅜ inch bottom entrance which does not seem to interfere with their ability to store honey if other conditions are favorable. On the other hand there are beekeepers in these hot areas who feel it is a great handicap to a colony of bees not to provide supplementary ventilation to the normal bottom entrance. Honeybees have a great ability to ventilate a hive through a restricted entrance by vigorous fanning. We cannot always judge the needs of the bees by our own concepts of obtaining our personal comforts.

**Q. One of the problems I encounter in the spring management of my small apiary is providing queens for queenless colonies in early March. Unfortunately I have to wait at least one month for delivery since the queens cannot be shipped earlier due to the risk of inclement weather. Meantime the queenless colony dwindles away. I wonder if it is feasible to buy the queens in the fall and winter them inside my house**

**What conditions need to exist (temperature, food, accompanying worker e.t.c.)for their survival till March? F.J., New Jersey**

A. Wintering queen bees in your house would be nearly impossible.

Sometimes it is possible to keep queens over winter by confining them to a nucleus colony which is overwintered on top of a strong colony of bees.

It is possible to obtain queens quite early in the spring from breeders in southern Florida. We would suggest contacting them during the winter to place your order and arrange for a shipping date early in the spring.

Another suggestion is to check the condition of your queens during the previous summer or early fall by examining the brood frames. If records are kept of each queen these will give you a clue to when they may need replacing. Few queens last beyond two seasons. Replace any failing or overage queens in the fall when queens are plentiful and often cheaper. I am sure this will reduce many of the problems with queenless or dwindling colonies in the early spring.

**Q. I wonder if one or more of your readers may have a solution to a problem I had this spring. We have 22 acres of 5-year-old semi-dwarf apple trees which blossomed fairly well. At the same time, a grove of wild cherry was in blossom on the property south of ours. All during the time the apples were in blossom, the bees were on the cherry. I did not see one honeybee on apple all during blossom time.**

**As a result, we had a short fruit set, no more than 5%. Do bees prefer cherry to apple? Would it make a difference if I moved the bees to the northside of the orchard, 2,000 feet away from the cherry? R.M., New York**

A. There are several species of "wild cherries" which occur in different parts of the country. The most common in the midwest is *P. virginiana*,sometimes referred to as choke cherry.I have never seen many bees on it but there could be exceptions. Cultivated cherries growing "wild" could be another matter. I doubt if there was a serious conflict between your apple trees and the blooming wild cherries that resulted in the poor set of fruit on your dwarf apple trees. You did not mention your choice of varieties and your planting plan. This should be reviewed with your horticultural advisors at your state university or your county agent. Bee visitation is minimal to set a crop of apples and with bees in your orchard there should be no problem of ample pollination, weather being favorable. Moving the bees farther from the wild cherry trees would certainly help to concentrate the bees on the apples if they are distracted by the cherry blossoms.

**Q. I read so many articles about soybeans and bees. Over the years, on our 327 acres at Defiance, Ohio, we have grown soybeans and I have never seen a bee on a soybean blossom. This year I have made it a practice of going into the fields to watch for bees on soybeans. I have yet to see bees on the blossoms.**

**I had 20 hives at Defiance, Ohio and 10 near Waterloo, Indiana in fields of soybeans and red clover. Once in a while you see honeybees try red clover, but never have I had any bees on soybeans, why? B.L., Michigan**

A. This has been my experience as well, never having seen a bee on soybeans in northern Ohio, but of course there are no doubt exceptions. These observations are important in that it shows that soybeans are not attractive to bees everywhere. In the Midwest and in the more southern states, soybeans are an important source of honey. Several factors may be responsible. Our soils may not be suitable for the secretion of nectar by soybeans, temperatures unsuitable or the variety we grow may not produce nectar. Different varieties of soybeans are planted at different latitudes.

**Q. Where I live in Northern Idaho on the beautiful St. Joe River in the mountains there are several small beekeepers like myself, 15 - 20 colonies each, and we work close together as friends and fellow beekeepers.**

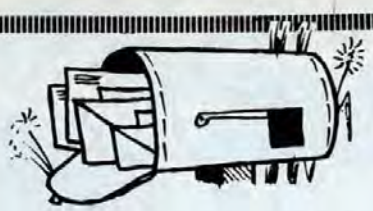
**1. We have been trying to plant yellow sweet clover by broadcasting it on banks, edges of road, right-of-way and in the spring of the year but it does not seem to grow although it does grow along the rail road right-of-way and county road. Can you explain what we are doing wrong?**

**2. In the high country above us are large crops of bear grass or bear paws (*xerophyllum tenax*). Are these good honey producers? About this time of the year fireweed is abundant as there are lots of clear cuts and burned over areas. The roads (logging type) are quite rough. Do you know of a system of transporting bee hives over these rough roads?**

**3. In this part of the country there are**

*(Continued on page 581)*

# Gleanings Mail Box



## Wants Better Labeling

Dear Editor,

In reference to Mr. Vern Sisson on his proposals for grading honey in the July issue of Gleanings and the Robert Richards article in the June issue:

I or anyone who sells local honey should be able to see just what will happen to the honey market. I believe honey imports could cut into our honey industry but the approach to the matter is definitely wrong.

I see the big bottlers wanting to buy imports and not give a hoot as to what flower source or flavor it has. It's too much of a problem to check out the flavor source so he dumps all the flavors and colors into a big tank, puts it through a filter press, takes out all the good qualities and labels it "honey."

The value of honey is high and unique and in a class by itself, like a fine perfume, with a very delicate flavor and fragrance. How could anyone buy his wife perfume if it was labeled only as coming from France or Egypt or the United States? No choice as to what fragrance. Or how about the food market — at the jelly shelf, all the labels read "jelly" — no apple, berry, orange or grape — just "jelly" from North Carolina, Washington or Georgia.

Or go to the meat counter and ask for a pound of "meat" — no pork chops or steak — just "meat". Do you have a choice? Yes. Canada, United States and Mexico — does this sound like what the honey should be?

We need a specific labeling system, matching the label to its contents. Only then can the market make any gains. Create a need and honey will sell itself at any price.

There is no real substitute for honey. It is a convenient sweet, nutritional food with many fascinating flavors and unique properties. Let's keep it that way. Let's not dump it into one big tank and label it "honey from China" or "honey from South America" which means nothing to the consumer.

I agree there should be a curb on imports but there must be a better way or the honey industry will look like the steel and auto industry — gobbled up by the pac-man.

It would be time well spent for more honey packers to read Walter's Diehnelt's article on "What's Wrong with Honey?" in the July issue of *Gleanings*.

Alphonse Stankus
P.O. Box 60
Morgan, PA 15064

## Increasing Honey Use

Dear Editor,

Mr. Mraz in his column "Siftings" in June and July, 1982, did not talk very favorable about the honey import bill. His feeling was that we should strive to increase United States honey consumption.

From my limited experience, I see the commercial packaging of inferior honey a major reason for the small U.S. honey consumption per capital (less than one pound/year/person).

I have good honey customers that at first claimed that they didn't like honey. The common complaints were that it had a disagreeable after taste. After questioning them, it was obvious that their experience with honey was limited to the cheaper honey packed by packers which probably contained primarily imported honey.

If you go into a discount food/drug store etc. and buy a three or five pound jar of the honey on sale at less than 80 cents per pound you normally get a product that has considerable after taste. Granted some people like dark, strong flavored honey with that after taste, however, most do not.

If honey is honestly presented to the consumer, stating the area of origin, not destroyed by over heating, and described as to floral source or whether mild or strong flavored, part of the consumer resistance will be overcome.

Jack W. Booth
3551 Eastside Calpella Rd.
Ukiah, CA 95482

**Editor's Note — Like any food pack, or any other product, for that matter, there are various grades and various priced products on the market. It is only natural that some manufacturers or packers are going to manufacture or pack for the less discriminating or for those who are forced or choose to buy the cheaper brands. I agree that better packing standards are needed for honey to tell customers that honey can and often does run to widely differing tastes. Unfortunately some honeys totally unfit for table use are packed with little to differentiate them from the premium honeys, except for possibly the color, until the jar is purchased and the honey is sampled by the buyer. A pack of poor quality honey sold to the public does the industry much harm. The overwhelming majority of our honey packers are very particular about the quality of their pack and we must make it clear exactly where our objections to a few of the commercial packs are directed.**

## Letter of Thanks

Dear Editor,

I would like to thank all the beekeeper-photographers who responded to our call for colored photographs for a 1983 Beekeeper's Calendar-Diary. The response was tremendous and we have selected 12 beautiful colored pictures of bees and beekeeping. The Calendar-Diary will be large (11″ x 17″) and will have plenty of room for recording blooming dates, weather, and other bee business. We have selected a good grade of paper and the Calendar-Diary will look good hanging anywhere.

We hope you'll use the Calendar-Diary to help promote bees and honey.

John Gremmer
Lake Winneconne Honey Farm
217 Hiawatha Drive
Winneconne, WI 54986

## Making Splits

Dear Editor,

In regard to the question asked by

*(Continued on page 583)*

By J. IANNUZZI
RFD 4
Ellicott City, MD 21043

# I'm A Nectar Collector Part III

*The final chapter in the attempt to tap fifty state and one hundred foreign hives in order to add to one's melliferous miscellany.*

THE TELEPHONE JINGLED yesterday (May 17, 1982). Within thirty minutes, a total stranger on vacation in the Washington, D.C. area, Wesley Waring, 2534 Quincy Street NE, Minneapolis, Minnesota 55418 appeared at my door with ten ounces of "creme" honey, a gift from the president of the Minnesota Hobby Beekeepers Association, Dan L. Hollerbach, 3935 Van Dyke Street, White Bear Lake, 55110, thereby boosting my collection of state nectars to 39. My total holdings now number 158 bottles, mostly one-pound glass queenline jars, representing twenty-four foreign countries and 50 different floral sources in the stingingly sweet hobby I began at the Eastern Apicultural Society (EAS) Wooster, Ohio August 1978 meeting hosted by John Root, associate editor of *Gleanings* and vice president of the A. I. Root Company of Medina, Ohio. And those elusive eleven American states are the following: Alaska, Colorado, Idaho, Iowa, Louisiana, Nebraska, Nevada, New Mexico, Oklahoma, South Dakota, Wisconsin and Wyoming (although there are actually twelve listed, I strongly suspect that one of them is the mystery state with the mystery honey received unidentified in the mail in November 1981).

### My Fifty Different Nectars

My nectar lineup now reads as follows: acacia, alfalfa, apple blossom, avocado, basswood, blackberry, blacklocust, bluebell, blueberry, blue vine, buckwheat, clover, eucalyptus, gallberry, goldenrod, *holly, *huckleberry, Key lime, "killer bee," lehua, lime blossom, linden, ling heather, *lychee, *melaleuca, mesquite, mimosa, *"mystery," orange blossom, palmetto, *peppermint, poinsettia, raspberry, rosemary, safflower, sage, sourwood, sunflower, strawberry, *tallow, *tamarisk, thistle, wild thyme, *tree of heaven, tulip poplar, tupelo, vetch-poplar, *wild cherry, *willow and wildflower (the twelve starred are new ones since the appearance of part two of this article in *Gleanings*, November 1981) produced by *Apis mellifera ligustica, indica, dorsata* and *Trigona minima*, the stingless bee that belongs to the family *Meliponidae*.

### The Contributors

Those who added to my horde of sweet viscid fluids via the U.S. postal system or the United Parcel Service deserve recognition beyond my initial response. The same month that Part II was published, mystery honey appeared from a mystery state with the postmark illegible and with no return address. The month of December saw receipts from Michgian, North Dakota and Montana as follows: the keeper of 27 hives around Holland, Mich., Jim Zoerner of 6965 Holly Drive, West Olive 49460 sent a bottle of "99% sweet clover honey" which he facetiously labeled "Dutch." David Padoll, Fullerton, N.D. 58441 mailed buckwheat and Albert G. Bell, 2857 Colton Blvd., Billings, Mont. followed with a one-pound queenline of "fancy clover" along with nine labels, two business cards, sanfoin seed (cultured "like alfalfa") and a two-page newsletter from his pen called "Bee Mail." About this time, I eagerly responded to Mrs. Ben Wood, 804 Lawrence Street, Belle Fourche, So. Dak. 57717 who had offered to send raspberry/strawberry fruit honey, emphasizing that it was not nectar from the blossoms but nectar from the fruits themselves. (I am still anxiously waiting since her state is among the missing.) January 1982 produced honey surprises from two new states. About seven ounces of creamed peppermint honey — my spouse exclaimed that it looked "like peanut butter" — arrived from Vince Vazza, OVA Apiaries, Rt. 3, Box 3536, Hermiston, Ore. 97838 who wrote "no charge other than letting you pay the (COD) freight." Then eight ounces of medium amber "Honey from Brazil" appeared in my mailbox bearing the label of Charles E. Barton, 791 Sherwood Drive, Lexington, KY but the enclosed business card revealed that it was sent by James M. Steed, "Collector of Honey Pots and Dishes, Shakers, etc. with Honeybees on Them," P.O. Box 115, Richmond, KY 40475. Unlike the Vazza package provoked by previous correspondence, this had come entirely unsolicited.

It was a harbinger of good news since the next day Steed sent his first of many letters announcing that he had mailed "via the post office" four one-pound jars of honey for my collection because he had "enjoyed reading your two articles in *Gleanings*." He ended by saying: "I also have the collecting illness. I gather old and unusual honeypots and every and anything with a bee or skep motif on it . . . I am a hobby beekeeper with two hives and am a perpetual beekeeping student . . . Could you send me three of your labels?" Packages continued to flood in from Richmond, KY in the following

**L to R: J. Iannuzzi, the author; Carrie Cabatit, Hagerstown, Md., Stafford tourguide; Annamare Iannuzzi; Rita Stafford and husband Wayne, Ft. Wayne, Indiana, visiting the author Ellicott City, Maryland.**

two months containing more than thirty-seven items, at least a dozen of which were one-pound glass jars of honey, giving me two new states (Blue Grass and Lone Star) and two new floral sources — Chinese tallow and wild cherry (see photo for picture of this "fearless" Kentuckian). He was very proud of his local honey as he noted in one of his many epistles: "All the KY honey I have sent to you is from the apiaries of outstanding honey-commercial apiaries. G. D. Hieronymus and Rick Sutton have both won KY honey sweepstakes at the KY State Fairs, Sutton in 1981 and Hieronymus many times prior to that."

The month of showers saw an addition from "The Land of Opportunity." H. D. VueCasovic, Bexar (near Batesville), Ark. 72515 surprised me with a pound of "wild and natural honey" collected in "an area where tupelo, persimmon, sassafras and wilflowers" grow. It was buff colored, granulating and very pleasant tasting — as if with a touch of lemon. (His state seal, incidentally, carries a skep — meaning "industriousness" — as does both the seal AND flag of Utah — the only two states to so honor the pollen collector.)

Earlier this month (May), keeper of a hundred hives Wayne Stafford, 2015 Lower Huntington Road. Fort Wayne, Ind. 46819, who had spent the year end in the Philippines producing high quality foundation to match the size of the tiny *Apis cerana (Indica)*, came through again with more of the liquid product of the hive, this time from his

**Kentucky and other honeys and comb mailed by James M. Sted, Richmond, Kentucky in response to the author's *Gleanings* articles.**

**James M. Steed, P.O. Box 115, Richmond, Kentucky 40475, collector of honeypots and bee trivia, proving that "Kentuckians are known for their bravery."**

own missing state as well. Typed he: Hi, I finally got around to sending the honey that I promised. Hope that it came OK (he's an excellent packer). The honey with calamansi is probably *Apis dorsata* mixed with calamansi juice. Calamansi is a small lime-like fruit that is very common in the Philippines. This mixture seems to cause granulation. The jar of Palawan Golden Honey is gathered by honey hunters on the island of Palawan. Can you believe the label on the back of the jar? They call these large combs that are built in the open "beehives." Most of the honey sold in the Philippines comes from Palawan and is "wild honey" gathered by honey hunters.


**Foreign honey (clockwise): Ireland, Argentina, Columbia, North Wales, England, Mexico (wildflower) and Argentina, a gift from the author;s peripatetic Pittsburgh sister-in-law**

Incidentally, this Hoosier was the first apiculturist to drop in for a visit (July 22, 1981) as the result of this series on nectar collecting. The hydraulic engineer from Minnesota mentioned in the opening paragraph was number two. I am sure that there will be more since a U.S. Army nurse writing from Panama for apiarian information after reading our output in *Gleanings* promised to stop by in July on a home visit to deliver what the Spanish and French call *miel*.

### Honey from New Jersey and West Virginia Visits

Of course, I just do not sit at home each day waiting for the mail lady to show up; I have been active on my own. August 1981 found us attending the annual convention of EAS at

Rutgers in New Brunswick, NJ. Bob Harvey, Elmer, NJ, who had extensive displays there on behalf of the local sponsors, the New Jersey Beekeepers Association, invited us to stop at his place on our way home. The result was willow and melaleuca that he had harvested in Florida, the former from floating his hives out into the Everglades.

At EAS itself, we garnered a jar of what many call the "blue ribbon" of honeys from a Tennessee apiarist in attendance. Stephen H. Dilley, 3634 Valley Vista Road, Nashville 37205 was delighted to sell me, in my own container, a pound of honest-to-goodness sourwood, since he was carrying it only in bulk for delivery to his daughter. This superlative sweet substance now joins my other "sourwoods": The first was picked up from a roadside stand in The Free State, packed in Mississippi; the second from another local fruitstand, but originating in Pennsylvania; the third from a flea market in Myrtle Beach, bearing another Mississippi label; the fourth from my Kentucky friend Steed, but carrying a Virginia label. However, the last acquistion I feel is the real McCoy, thanks to Mr. Dilley whose appropriately colored amber business card read: "PURE HONEY . . . from B to U."


**National and International (clockwise): the Mystery Honey from the Mystery State; David Padoll's North Dakota buckwheat; Koichi Ota's Japanese buckwheat; Bruce Slater's Chinese lychee; Ota's Nipponese tree of heaven (paradise); Albert G. Bell's Montana fancy clover.**

Finally there are two more new mels that need to be mentioned: huckleberry from Washington state and holly from the state that calls itself "America in miniature." The first was a gift of a local relative visiting his folks in his native state: as light as apple blossom, it tastes a little bit like it. The other came from fellow Maryland State Beekeepers Association member James Weston, Waldorf, a friend of a very good friend in tobacco land, southern Maryland.

**Iannuzzi with his collection of 50 nectars from 39 states and 24 foreign countries.**

Also in August 1981, we made a special detour to James Johnston's place in Terra Alta, West Virginia for some of his bee products — buckwheat, clover and wildflower. This meant another new state. He was the same who had "sprouted" his 101st beebeard at the Rutgers EAS meeting as he was bucking hard, as he told me, to replace Don Cooke, Lebanon, Ohio, from the *Guinness Book of World Records* with the largest such buzzybeard in the world. Later this Preston County beeman sent along, in February 1982, a gift packet of three little bears of local nectars in appreciation for an article I had done in the *American Bee Journal* where he appeared on the October 1981 cover with what he called "a honey of a beard."

### Nectars from Abroad

Meanwhile my foreign collection has been inching forward. Five new nations have been conquered, three of which were the direct results of the personal efforts of Dorothy, my Pittsburg sister-in-law: Wildflower from Ireland and Morocco, unspecified from Argentina and some "miel" from

Ceuta, the Spanish city on the Strait of Gibraltar in Hispanic hands since 1580. Then there is the previously mentioned Steed honey from Brazil as well as a jar of "killer bee" sweet viscous fluid from the same country placed in my jumbo mailbox by a generous neighbor, Dr. B. Slater, Ellicott City, who also gifted me with California tamarisk in the same fashion, just as he had done in November 1981 with Chinese lychee. That Golden State label was intriguing: "Tamarisk or Manna Plant .... Sometimes called the oldest honey on record — BIBLICAL HONEY — Organic — U. S. Fancy — Product of U.S.A. — This is Pure Honey, Unblended, Uncooked and Unfiltered. — Packed by JACKS HONEYBEE PRODUCTS, Pasadena, California 91107. — NET WT. 16 OZ. (1 LB.)."

October 24-29, 1981 found us in Acapulco attending the Apimondia meeting of beekeepers from the world over. By prearrangement I exchanged honeys with Koichi Ota, 102 Yokomichi, Yawata-cho, Toyokawashi 442, Japan, the apiculturist specializing in greenhouse strawberry pollination whom I had initially met at Apimondia 1979, Athens. I have this 400-hive owner's buckwheat and tree of paradise and he, my black locust and tulip poplar.

**Complete Listing of State and Foreign Nectars**

To date (May 18, 1982), this the inventory of my collection:
Alabama — tupelo
Arizona — mesquite
Arkansas — wildflower
California — avocado, eucalyptus, orange, safflower, sage, tamarisk
Connecticut — wildflower
Delaware — blueberry
Florida — buckwheat, clover, gallberry, Key lime, melaleuca, orange blossom, palmetto, thistle, tupelo, wildflower, willow
Georgia — tupelo, wildflower
Hawaii — lehua, mixed blossom
Illinois — clover
Indiania — clover
Kansas — sunflower
Kentucky — clover, tulip poplar, wild cherry, wildflower
Maine — wild raspberry
Maryland — alfalfa, basswood, blackberry, black locust, holly, thistle, tuplip poplar, wildflower
Massachusetts — linden
Michigan — sweet clover
Minnesota — clover
Mississippi — "sourwood," wildflower
Missouri — blue vine
Montana — clover
"Mystery state" — "Mystery honey"
New Hampshire — strawberry, wildflower
New Jersey — blueberry, clover
New York — buckwheat, wildflower
North Carolina — "sourwood", wildflower
Ohio — basswood, black locust, buckwheat, clover
Oregon — peppermint
Pennsylvania — alfalfa, apple blossom, buckwheat, clover, goldenrod, "sourwood," wildflower
Rhode Island — mimosa
South Carolina — "sourwood," vetch-locust, wildflower
Tennessee — clover, sourwood
Texas — tallow
Utah — clover
Vermont — clover, wildflower
Virginia — clover, "sourwood," wildflower
West Virginia — buckwheat, clover, wildflower
Washington — apple blossom, huckleberry

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Argentina — unspecified
Australia — bluebell, leatherwood
Brazil — "killer bee," unspecified, wildflower
Canada — clover, goldenrod
Chile — wildflower
Columbia — unspecified
Denmark — poppy?
Egypt — wildflower
England — (see "United Kingdom")
Greece — wild thyme
Haiti — poinsettia
Hungary — acacia
Ireland — unspecified
Israel — orange blossom
Italy — wildflower
Japan — buckwheat, tree of paradise
Mexico — wildflower
The Netherlands — unspecified
The Philippines — wildflower
Peoples Republic of China — lychee, unspecified
Rumania — lime blossom
Spain — rosemary, wildflower
Thailand — unspecified
United Kingdom
England — wild ling heather
Scotland — wild raspberry
Wales — heather

As I finally conclude this series, I must say "thank you" again to all those wonderful apiarists, those *Gleanings* readers scattered across this continent and around the world for favoring me with their mellifluous product and their kind letters and their surprise visits I carry fond memories with each of those mellifluous jars gracing my china closet as I am certain that my goal of conquering fifty states, forty-nine of which I have already camped in, is just around the corner and as I keep in the back of my mind the record of James W. Dickson Jr., Rt. 2, Horse Shoe, North Carolina, who in his seventy-six winters on earth has a collection of 203 jars of honey from thirty-nine states and fifty-three foreign countries! □

# A. B. F. 1983 Honey Show

The Honey Show for the 1983 American Beekeeping Federation Convention is scheduled for January 18 through 22 at the Sheraton-Waikiki Hotel in Honolulu, Hawaii. The rules for the show are the same as the 1982 rules. For a copy of the rules write to Frank Robinson, 13637 N.W. 39th Avenue, Gainesville, Florida 32606.

Exhibitors should be aware that trophies will be awarded in seven classes of extracted honey; three classes of comb honey; creamed honey; natural, unbleached beeswax; and sun-bleached beeswax. In addition, a "best of the show" award will be made.

Each entry must be accompanied by four of the exhibitor's labels, to identify the producer and the floral source. The entries will be sold at auction with the proceeds to benefit the American Honey Queen Program. Last year's auction netted over $3,000. It's a great way to make your donation to the Queen Program. Please help!

Be one of the 13 to receive a silver tray. For tips on "HOW", write to: Bill Ruhl, P.O. Box 15553, Portland, Oregon 97216.

A completed entry form and the entry fee must be mailed to reach the Honey Show Committee by January 8, 1983. Mail them to American Honey Show, C/O Paul Heins, P.O. Box 517, Albany, OR 97321. The entry form should indicate how the exhibit will be sent to the committee. If they are to be shipped instead of brought with you, send them to Art Chang, 45-138 William Henry Road, Kaneohe, Hawaii (UPS Blue Ribbon is the best method) Zip code 96744.

# Capping The News

THE EDITORS

*"Beekeeping Small Talk"*

## National Honey Week

BY THE TIME you have read this National Honey Week will be nearly here. It is scheduled for the week of October 10-17, 1982.

We hope beekeepers and everyone in the industry considers this as only a beginning in adapting new attitudes toward the promotion of honey. In recent years the sale of honey was boosted by being fortuitously allied with the "natural food" activity. There may be as many, or more, natural food advocates as ever but selection of what consfitutes the best food for human nutrition has become more sophisticated as knowledge increases. People demand more proof that what is being sold as health food really measures up to the nutritional standards claimed for it. They want to be certain that a health food, if such is the claim, is pure, not overprocessed and not overpriced as compared to foods not labeled with any special claim to being a "health food." These reactions may be normal in consideration of some of the excesses attributed to 1970's emphasis on and preoccupation with exotic claims and names for common food preparations that has no particular health benefits outside their natural nutritional value.

Honey, because of it long history, dating back to biblical times and before, has maintained a fairly steady course throughout recent times in respect to its appeal to the buying public. The natural foods movement did not drastically advance the consumption of honey, it simply made it easier to sell. If anything, it lulled the industry into thinking that honey sales will come automatically; the product need only be stacked on the counter to await the rush. Now we are finding otherwise, particularly with the growing competition of the cheaper sweeteners.

If there has been any damage to the reputation of honey it has come about through several unfortunate occurances, one due perhaps to the lack of an agressive policy in prosecuting adulterers of honey and the other a set of circumstances where honey was "caught in the middle." a position which is less easily explained to the public. This last circumstance is the role of honey in the botulism business. This development did not come about because of irresponsible and dishonest packaging of honey but from reports outside the honey industry which originated from supposedly scientific studies. Without going into the complexities research reporting and their interpretation it is sufficient to say that honey was singled out, it seems, from other substances equally capable of giving an infant an illness called infant botulism under some unusual sets of circumstances. The public, during the ensuing publicity, seized this as a convenient "hook" on which to hang blame for the usually unexplained cases of infant botulism. We say unexplained because honey use by infants was not always, as admitted in the data submitted, positively proven to be the cause of the infant botulism in the cases studied.

Regardless of these setbacks honey has much going for it, to use a common expression. Honey promotion can be directed at an existing market; there is no need to have to introduce an unknown or untried product. Honey promotion need not be confined to a particular segement of the population; just about every person alive is a potential consumer. Few people dislike honey, or find it forbidden, in moderation, in their diets. By simply avoiding the purchase of honey does not necessarily express disapproval by a shopper. The convenient excuses offered are often untenable when examined by competant analysis and this should be the basis of forceful advertising. We hear: "Honey is too expensive" (true, about four times the price of granulated sugar, but value is not always measureable in dollars and cents. Actually, less honey is used when substituted for sugar and this disparity is even less when considering the extra benefits of honey). "Honey is fattening" (no more so than the sugars used in place of honey. We must look at the overall consumption as the culprit, urge moderation and suggest honey as the best food to satisfy the quest for quick energy foods, not the far greater consumption of sweets and sweetened foods which lead to obesity. "Honey is not always the same flavor and some times I get honey that I don't like" (Yes, this can be a legitimate complaint. While variability in honey flavor can be a very desirable characteristic it can work the other way when sub-standard honeys, in respect to flavor, are sold with no identifying label to inform the consumer prior to purchasing. Better packaging and labeling can turn this possible complaint into a very positive advantage to honey over the sweeteners. "Honey is sticky and tends to drip from containers." (Food technologists, if given the chance, can do wonders with processing and packaging of foods.)

Yes, honey has almost unlimited possibilities for promotion. Sometimes it appears that the greatest obstacle to expanding the honey market is not the resistance of the public to buying honey but the resistance of the beekeeping indurstry to use all of the opportunities available to bring about this desired end. The honey industry may be underestimating the value of their principal product. This is not to say that honey should be given another immediate price boost but rather that the image of honey needs to be raised in the eyes of the producers, the packers and everyone elsé involved with beekeeping. Only then can we convince the public, through advertising, that honey is worthy of being on their shopping list. Lets not give the market to the common sweeteners by default. They have so much less to offer than honey, yet are reaping the bulk of the consumer's dollar leaving honey to pick up only a small percentage of the sales. We must stand up and say "This is the best buy" to the consumer and show why honey is just that; first being cetain that we are ourselves convinced that this is true.

The buying public has an amazingly good image of honey. Are we in the industry as confident of the superiority of our product?

From America's Lar

# 4-FALL FI

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(71% Sugar — 29% Water)

| Midwest | Western |
|---|---|
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| (14.50/100 lbs. dry) | (18.00/100 lbs. dry) |

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| 2 queenline | 4.10 | 3.49 |
| 3 queenline | 5.15 | 4.10 |
| 4 queenline | 3.55 | 2.95 |
| 5 round | 3.35 | 2.85 |

**Prices subject to change without notice.**

## Our Reader Survey

We wish to express our apprectiation for the excellent response received from our reader survey. We have yet to make a final tally and anaysis of the information received. Thank you for being so candid and also for the many nice things you had to say.

Apparently the greatest dislike in subject matter are articles of foreign beekeeping, research reports written in complex language and anything which has nothing to do with beekeeping.

*Gleanings* received good marks on the basis of being a beekeeping magazine easily understood by hobbyist beekeepers, which makes us happy.

We will not ignore the criticism either. Whether anything can be done to follow some of the suggested changes remains to be seen. We promise to look at these suggestions with an open mind and do some positive thinking. It must be remembered that *Gleanings*, like any other private enterprise, has to be supported by revenue from subscriptions and advertising. *Gleanings* does not have the subscription and advertising revenue of the million-plus reader magazines to which you may be comparing it. *Gleanings* is not supported by taxes, and cannot depend on revenue from corporate profit-sharing, institutional endowments, nor does it have support from educational, philantrophic or fraternal or professional organizations. Because of this a magazine with only a modest circulation cannot afford the embellishments you have come to expect of others delivered in polished form and in grand fashion to your mailbox.

You have contributed immensely to our understanding of your desires, what we are doing well and what we are not doing, or not doing well. Thank you again for your cooperation.

## Wintering Bees

Darned if winter isn't on the way again! We had hoped to have at least one article in this issue on the subject of wintering honeybees in the United States or Canada. We may fall short of this goal this month.

Due to some severe losses experienced in the colder regions during the winter of 1981-2 many beekeepers were forced to buy package bees or make divisions to replace winter losses rather than using these methods to expand their operation. In some instances empty equipment was simply stored without bees being reintroduced.

Most beekeeping texts at least outline the principles of wintering bees, some are very complete in this respect. Any article we publish in *Gleanings* will most certainly review these principles and in addition provide all of the up-to-date information available. Information on wintering bees can come from many sources, most of which is reliable, but beware of practices which ignore the principles of good colony strength (queens), ample honey and pollen, ventilation and some protection or insulation where the temperatures reach the sub zero levels and have strong winds. Common sense is your best guide but we must caution that the survival of a colony of bees during winter is quite different from, for example, the warm blooded mammals.

On the more practical side we are finding that hive insulation may not be as outdated as we once thought. The principle of insulation merely needs updating in practice to prove its value. Prefit wrapping for single or multiple units of hives is being developed. Prestructured ventilating units may prove to be practical and efficient, fall and spring feeding formulas and programs may help survival and certainly indoor wintering may see more use as well as the movement of bees to milder or protected wintering sites.

Most beekeepers who have wintered bees for a season or two should at least have a fair grasp of what is needed to overwinter a colony of bees. If not, the principles are outlined in nearly every text on keeping bees. What is really needed is to convince beekeepers, particularly in the colder climates, that bees sometimes do need assistance. In very cold latitudes your colonies are likely to benefit from a wrapping of lightweight tarpaper or other sheathing material. Ample food supplies, good colony strength and ventilation are some other essentials if a colony is to have the expected 90% chance of surviving a cold winter, and the unpredictable springs which often follow the northern winters. □

# Turkish Apiary

These hives belonging to Fahri Veziroglu are located under almond trees with wild mustard growing in the foreground. Citrus trees are shown in the background. There are several different varieties of almonds in the orchard, which start blooming in early January and continue until the end of March.

# Bee Talk

By RICHARD TAYLOR
Route #3
Trumansburg, NY 14886

SEPTEMBER HAS A mood of its own, and it is a sombre one, neither summer nor fall. The grass is filled with the strident chirping and buzzing of insects, but unlike the bird songs of May, these announce the impending decline. Everything has reached its culmination. It is time now to be thinking of getting wood in for the fireplace. I realize once again that the world, and I, are older, and time itself seems to accelerate. Do you remember when, as a youngster, you had a twenty-minute recess from school, and this seemed like a wonderously long time to play? And then, as an adolescent, you were expected to be still in the study hall for an interminable forty minutes? Time then moved with leaden feet. Now, ten years are about the same as day after tomorrow. Another bee season ends, and it only just began!

I learned something this year, though. I discovered the fun of pollen trapping. I have a friend who, with his wife, makes a livelihood manufacturing bee hive equipment and beeswax candles. They make beautiful things, pouring into their crafts the same love they have for the bees. And this friend sent me a pollen trap of his own design and manufacture, to try out. I didn't feel much like fooling around with it. I've become set in my ways, and all I'm really interested in, I thought, is raising comb honey. But I gave it a try, and what joy! Now I am suddenly a dedicated pollen trapper.

I tried pollen trapping about fifteen years ago, and gave it up in a hurry. I made up eight or ten pollen traps, put them on the hives in the spring, and had lots of problems in no time. The bees seemed to find ways to get in and out of the hives without going through the traps, and I was spending half my time trying to correct that. Then they started swarming, and the neighbors got upset, so I removed the traps to the basement, and they are still there.

They were of the wrong design. They required trying to orient the bees to a new entrance. This one just replaces the regular bottom board, so you don't have that problem at all.

Every two or three days I go out and empty the trap, and I am astonished by the quantities of pollen. And the varieties — pellets or six or eight colors. I wish I knew where they come from. I am completely sold on this. I'll add pollen to my pancake batter all winter, adding greatly to my vigor, and come spring I'll boost my colonies to prodigious strength with this precious stuff. And it is precious. Yesterday I stopped at the natural food store to pick up some walnuts, and there I saw small packets of pollen priced at a $1.89. It seemed to be less than I get from one hive in one day. That got me to figuring, and in no time at all I became immensely wealthy, in my imagination.

I don't see many plants blooming around here now, so I am much puzzled by where these different kinds of pollen come from. Someone ought to write a book about this, with illustrations of all the different pollen grains under magnification, together with a color key. I have such a book, but it was published long ago, in England, where the plants are quite different, so it doesn't do me much good. I am very curious to know where my bees are going to get this pollen.

Pollen trapping works in pretty well with my beekeeping. I've never tried to get much honey from the few hives I have here at the house, because of the competition. There is a beekeeper less than a mile away in every direction, and a big commercial one right nearby. So I have just used these hives mostly as a place to pile supers of old combs, to keep the wax moths out of them, and for making up nucs in the spring. But now, since I am not much interested in getting honey from then anyway, I can use them as pollen producers and then, in the spring, use the pollen in my comb honey yards, to boost production there.

That's the nice thing about beekeeping — there are so many different and exciting things you can do! I've never tried queen rearing in a serious way. Maybe I should. I suspect that if I did, then I would get so carried away with that fascinating art that I would probably neglect all my other responsibilities in my dedication to it. Maybe for now I'd better be content with raising comb honey and trapping pollen.

## ANNOUNCING

### Winners of the A. I. Root Contest at E.A.S.

**Guess the number of wood cell cups.**
**The right guess was 154.**

**Winners:**
**Paul Hilbert (153)**
**Rt. 2, Box 253**
**Timberville, VA 22853**

**&**
**H. A. Fulton (155)**
**4380 Olentangy Blvd.**
**Columbus, OH 43214**

**DECORATIVE SUPERS GIVEN TO EACH.**

# Research Review

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

## Honey Clarifies Apple Juice

ROBERT W. KIME, Research Support Specialist at Cornell's Geneva Experiment Station and a 150-colony beekeeper, has shown that a very small amount of honey added to apple juice will clarify it. At present, commercial processors clarify apple juice by adding enzymes such as polymethylgalacturonase, but these have many unwanted side-effects. These include off flavors, permanent hazes, and the loss of flavor and body. The greatest problem is that pectin in the juice is lost. Pectin is important for flavor and body and is also a valuable dietary component in natural fruit juices. Adding honey has none of these disadvantages. In addition, it works at any temperature above freezing and thus saves considerable energy compared to the present enzyme process, which requires a heating-cooling cycle. In the U.S. about 150 million gallons of apple juice are clarified each year with the old process, so the potential new market for honey and Kime's system is quite large.

The amount of honey needed varies. Kime's patent indicates one may use from 0.5 to 15 per cent honey. However, in actual practice Kime has shown that three per cent honey is usually more than enough.

The process is simple and may be duplicated in a kitchen. The honey is first added to the unclarified juice, then the mixture is stirred vigorously and thoroughly. The preferred temperature is 70 to95 °F. The time required for mixing, precipitation and separation varies from 30 minutes to 24 hours.

Several honeys have been tested including sunflower, buckwheat, clover and blends of these honeys. Interestingly, honey that has been heated will still have the same effect. Most of the honey remains in the clarified juice and acts as a sweetening agent. Much of the apple juice on today's market is sweetened with cane sugar, which is illegal unless so stated on the label and it is undesirable to some consumers interested in natural fruit juices. Juices clarified with the Kime process will be permitted to state "sweetened with honey" on the label, which should be of value in sales.

While Kime's primary interest has been the clarification of apple juice (because of its importance in New York State), other juices including grape, pear, prune and cranberry respond equally well to a honey treatment. Even hard cider and red and white wines can be clarified by this procedure.

The chemistry of what takes place when honey is added to a juice and a precipitate forms is not totally clear. Kime and others at the Geneva Experiment Station are investigating the process further. The process has received approval from the U.S. Patent Office, and can not be used without obtaining patent rights. The patent has been assigned to the Cornell Research Foundation. Persons interested in its use or information may contact Robert W. Kime, Food Science Department, New York State Agricultural Experiment Station, Geneva, NY 14456.

## Insecticide Spraying on Eastern Sweet Corn Increased in 1982

In the Northeast sweet corn has had four major insect pests this year: corn leaf aphid (which transmits a dwarfing virus), European corn borer, fall earworm and fall armyworm. According to my colleague, Professor A. A. Muka of our Entomology Department, this was the worst year in the past 15 for fall armyworm in the eastern states.

In Florida as many as 23 applications of insecticide were made on a single field of sweet corn in a 53-day period this spring to control the fall armyworm. In New York State this season many sweet corn growers used more than the normal 3 to 6 applications of insecticide against this and other insect pests; the situation was similar in several other northeastern states. The primary insecticide was methomyl (Lanate® from Dupont and Nudrin® from Shell). This is a well known bee killer and there were honeybee losses in New York State and, undoubtedly, elsewhere.

The fall armyworm is a migratory moth. In the North its primary host is corn but in the South it also infests peanuts and alfalfa. The moths cannot withstand cold weather in any stage and in most years the frosts kill them back to southern Florida and the Gulf States. Usually only a few moths reach the Northeast by mid to late August. However, this year the number of moths that reached the North was ususually great. Poor planting weather in the spring delayed sweet corn planting and the late corn was especially susceptible to attack

It is obvious that pesticide use will not end. The great majority of the American public will not tolerate wormy corn. I estimate that at least 25 per cent of the ears in an untreated experimental planting of sweet corn by our laboratory were insect infested this year.

I have no good answer to the insecticide problem. In my opinion beekeepers should complain to the state regulatory agencies and at the same time support research that is directed at using safer materials and fewer sprays.

A great number of people favor natural or biological control of insect pests. In fact, it is natural control that keeps at least 90 per cent of potential pests under control. However, the outbreak of fall armyworm in 1982 is also a natural phenomenon and an example of the kind of thing that cannot be avoided. The growers of sweet corn felt they had no other recourse but to increase the number of sprays. Among the losers were beekeepers who lived in the areas where sweet corn was grown commercially. □

# Siftings

By CHARLES MRAZ
Box 127
Middlebury, VT 05753

RECENTLY, A REQUEST WAS MADE BY THE "Center for Science in the Public Interest," for a petition requiring a warning on the labels of honey containers that would draw attention to the potential danger of honey for infant botulism in infants under one year of age. Joseph P. Hile, Cmm. for Regulatory Affairs of the FDA denied the request and pointed out that samples of corn syrup have been found to contain B.C. Botulinum spores. This demonstrated that foods other than honey may contain C. Botulinum spores and believes it inappropriate to single out honey as a specific produce requiring a warning label.

It was further stated that, "there is a general scientific consensus that if one looks long enough in non-sterile foods that could be fed to infants, C. Botulinum spores probably will be found in most." This does indeed raise an interesting question. Do commercial infant formulas contain C. Botulinum spores? These infant formulas are made from a variety of products, such as soybean derivatives, various milk products such as dry wey powder, a byproduct of cheese making and often corn syrup is used as a sweetener.

If we consider the contacts these products make in processing before it ends up in infant formulas, we can assume there are many chances for these various materials to pick up C. Botulinum spores, perhaps even more than with honey. Have any tests ever been made for Botulinum spores in infant formulas? Has the Center for Science in the "Public Interest," made any such tests before singling out honey? It is interesting in Europe something like 200 samples of honey were tested for spores and none were found. If Infant Formulas do indeed contain Botulinum spores, then their labels also should contain a warning of danger to infants under one year of age. It will be interesting to see if such tests are ever carried out and if they will be made public. We beekeepers should assume such tests would be carried out by those with no interests in the product. It should be an independent test to be fair.

Several years ago there was an article by D. Caranaugh, J. Beazley, and F. Ostapowics in *J. Obstet. Gynaecol. Br. Commonw.* 77:1037-1040. 1970. and recently cited in Lancet in '82. The subject is: Radical operation for carcinoma of vulva; a new approach to wound healing. It states, "Undiluted honey was poured into wound twice daily and wound covered loosely with gauze; bacterial free for 3-6 days and remained so until complete healing in 3 to 8 weeks. Minimum of surgical debridement or skin grafting required as honey caused considerable chemical debridement. They concluded: "Honey is much more efficacious than the expensive topical antibiotics which we used previously. The patient's acceptance of the method is excellent once she overcomes her initial surprise at the apparently ridiculous method of treatment. Following discharge from the hospital patients may easily have the honey applied by a relative or nurse. With this technique the modal time patients have remained in hospital has been reduced from 7 to 8 weeks to 3-4 weeks."

The use of honey for wound healing is indeed nothing new, it has been advocated by doctors centuries ago, but only recently revived in England. If honey does heal so effectively with topical application, is it not reasonable to assume that it is just as effective to heal internally? Many experiences of the past have indicated this to be true. However, it is questionable if it will ever become popular. As indicated above, it appears "ridiculous" that a common substance like pure, natural honey should heal much faster and better than modern, expensive antibiotics. One thing in favor for using honey for this purpose, is that anyone can use it if they wish, it cannot do any harm and it is cheap. Try it on wounds and burns, you will be amazed how effectively it heals. The debridement or cleaning action of the honey on a wound or burns is truly amazing to see, as well as the rapidity of new cell growth, with minimum of scarring. This is the kind of publicity we need for our honey, not warnings that it may cause botulism when many other foods can be also contaminated with spores. There is no question the publicity with botulism and honey has had a drastic effect on the demand for honey. Mothers are now afraid to give it to their children, even much over one year of age. We need another Bodog F. Beck, M.D. "Honey and Your Health," and another D. C. Jarvis, M.D., "Folk Medicine" to make the public aware of the true health value of honey that it has enjoyed for thousands of years.

The past year or two there seems to be considerable emphasis on the control of Nosema with Fumidil. Apparently Nosema seems to be an increasing problem with many beekeepers. Here in the North some beekeepers cannot winter their bees without Fumidil. Far as I know this has not been a problem with our strain of bees over the past forty years. Our winters here in northern Vermont are about as cold as any beekeeping area in the U.S.. The bees often must go five months with no chance to fly. This is supposed to be an ideal condition for Nosema to develop, yet our bees winter perfectly. We lose very few colonies out right, usually only those queenless or drone layers. There is also very little loss of bees in the hives. The end of March and April, the colonies have just about as many bees as they did in the fall. Occasionally a hive with two deeps and a shallow will have bees from the inner cover to the bottom board in April, even before any honey starts to come in.

From my experience at least, there is such a thing as the bees being resistant to Nosema as well as they can be to other diseases. How much Nosema infection our bees have, I cannot say, but certainly not enough to cause any loss of bees at any time of the year. Anyone with a serious problem with Nosema, it can get to be an expensive disease to control. Not only the cost of the medication, but the chore of feeding all that

*(Continued on page 578)*

# A Testimonial For Propolis

By LEONORE M. BRAVO
San Francisco, CA

**Editor's Note — Articles that deal with the use of bee products to cure or prevent illness that are not accompanied with scientific data, always concern us. We are torn between letting our readers know what is happening in other countries where medications are not as strictly regulated as in the U.S. and the concern that someone might be injured by following the advice of such an article. We therefore advise that you seek competent medical advice before trying bee products.**

At the XVIII Apimondia at Athens, Greece, in 1979 I listened with great interest to a paper by T. Ivanov of Bulgaria on the iodine content of propolis, hence its anti-bacterial potential. Papers presented by Jugoslav workers Liker, Lolin, Panjevic, Dimitijevic and Tribic; and Pokorn and Yumirovic reported the antibacterial activity of propolis in vitrio, i.e. in a culture in a glass dish, and in vito, i.e. on a living animal with an infection. The studies reported were well done and convincing. One, illustrated with slides, showed the progress of successful treatment of an eye infection in a rabbit, another reported successful treatment of patients in a tuberculosis sanitarium. Another claimed positive results in the treatment of a malignant tumor using **Apicomplex**, a honey-pollen-propolis-royal jelly preparation marketed by Medex, a Yugoslavian firm. A film showed a dentist swabbing a patients gums with a propolis solution, alledgedly a preventitive for dental caries.

This kind of information began trickling into the United States where no such research is reported, via the bee journals and the health food magazines, and a gradual and widespread interest in propolis is showing up.

In 1980 officials of the San Francisco Flower and Garden show asked us to include hive products other than honey in our exhibit. Exploration for such products in local health food stores yielded NORDISK 50% pollen and 50% pollen capsules, a dry powder; and a similar combination of pollen and propolis but in liquid form in a capsule. A woman examining these and a Ginseng-royal jelly preparation from China and pollen tablets and natural pollen from Spain and Argentina commented that her husband swore by propolis to ward off the flu, a cold, or the sore throat.

A month or so later as I felt the sore throat that announced the onset of my semi-annual killer cold, I thought about the woman's comments and the propolis-pollen tablets on hand from the flower show and decided to try them. It must have worked because the sore throat was gone the next day and no cold developed.

Feeling a sore throat coming on the following spring and being out of packaged propolis I chewed a wad of raw propolis from our hives about the size of a half-dollar. After about half an hour my mouth felt numb, consistent with the claims of the efficiency of propolis as an anesthetic for dental work, and I experienced a heady fragrance from the now warm material as its various aromatic components were released and began to circulate in my oral and nasal cavities. The next day I had no sore throat nor any sign of a cold but the insides of my cheeks were sore as though I had been sucking a lot of hard candy.

I have since wondered if the sore mouth was due to the effects of Terramycin which had adhered to the edges of the hives where the propolis was deposited. I happen to be allergic to it.

Upon relating these experiences to others at Apimondia XVIX in Mexico and later at the California Beekeepers Convention at Lake Tahoe, I found that I had a lot of company. People related the same kind of results that I reported above and attested to no colds nor flu using their own propolis. One person reported


**Jugoslav Exhibit showing cosmetological and therepeutic hive products at Apimondia. 1979.**

that holding the propolis under the tongue gets it into the system quickly. A lady from Florida reported the same sore mouth that I experienced; others didn't seem to be bothered.

Exploring the health food stores two years after my initial search, I found seven preparations containing propolis including ointments and tinctures as well as pure propolis flakes and powder. Nearly all were packaged in England, but there were some from New York state and one local supplier of pure propolis. The U.S. beekeeping industry may be missing an opportunity in not developing this product. I note that only *Gleanings* carries an ad offering to buy propolis, and the advertiser states in the current issue that he is not buying it until further notice. Whereas, there are two ads for jelly and pollen.

At Apimondia in Mexico last fall I concentrated my attention on the Yugoslavian exhibits, Zlatmel and Medex and their products to learn more about them. Medex products were beautifully packaged and clearly labeled. They gave me a brochure from which I present the following list of products with their indications. It may help you whip up your own bee remedies!

APIKOMPLEX, mentioned earlier as having showed good results in treating a malignant tumor is described as a top dietetic product and the most prefect combination of substances found in a beehive. They claim that it will give your body everything that it needs to maintain physical and mental vigor and is simultaneously a perfect preventitive substance, improving resistance to disease. It's the only one of their thirty-six products that contains honey, royal jelly, pollen **and** propolis.

Fifteen of their products contain honey and royal jelly; ten of those contain pollen in addition. Examples of such products are APIFIT and MELBROSIN. APIFIT has five variations, two of which also have pollen. APIFIT #4 besides the three ingredients contains *Frangula* (Black Alder). It is recommended for constipation. APIFIT #5, in addition to honey, royal jelly and pollen contains *Echinacea* (purple cone flower) and is recommended for persons exposed to radiation therapy, menstrual and climacteric problems and exhaustion caused by a disease.

The other three APIFITS contain no pollen. APIFIT #1 in addition to honey and royal jelly contains Hawthorn (*Crataegus*) and vitamins. It is recommended for enchancing the function of the heart and vascular system and regulating blood pressure. APIFIT #2 in addition to honey and royal jelly contains Mullein, Thyme, and Anise. Its purpose is to facilitate expectoration, relieve raucous voice caused either by smoking or a cold, relieves coughing, bronchitis and whooping cough. APIFIT #3 contains Valerian and "extracts of other medicinal herbs" in addition to royal jelly and honey. It is recommended for persons suffering from nervous disorders including insomnia.

**Close-up of Zlatmell Exhibit. Their products have pretty labels but are not informative. Photo taken at Apimondia XVIII in Athens, Greece.**

APIRHEUMIN is an ointment made with bee venom, alledged to relieve rheumatic symptoms. PROPOLIS OINTMENT is described as healing skin sores and minor burns and as protecting the skin after irradiation. APIDENT is a toothpaste made with propolis which they claim hampers the reproduction of bacteria and fungi in the oral cavity, prevents the development of plaque, and stops bleeding and inflammation of the gums. PROPOLIS TABLETS are recommended to prevent inflammation of the oral mucosa, the larynx and gums. PROPOLIS TINCTURE is recommended for inflammation of the skin and mucosa, of the gums and oral cavity and larynx.

The Rumanians have an equally well developed line of pharmaceuticals and both countries have a long line of cosmetics based in products of the hive.

I brought back from the French exhibition at Apimondia in Mexico a Spanish translation of a booklet on Propolis by Dr. Yves Donadieu of the faculty of medicine of Paris. It is very concise and will answer any question that anyone might have about propolis. In general it is 50-55% resins and balsams; 25-35% wax, 10% volatile or essential oils, 5% pollen and 5% diverse organic and mineral materials. The two principal propolis collection seasons are the spring and the fall on very hot days when it is easier to handle for the bees. Obviously more propolis is collected in areas with trees than in others. Donadieu asserts that Caucasians and certain other bees of Asia Minor produce more propolis than others.

He rates NORDISK PROPOLIS, the preparation that I first used as valid for almost all therapeutic indications. One can take the capsules with water to fight off an incipient sore throat or cold. But one can also break open the capsule and rub the materials on sore gums as I once had occasion to do, with excellent results. I was travelling and the sore gums were gone the next day and I had no sign of anything having been wrong with the gums by the time that I arrived at the dentist the next week. NORDISK comes 50% pollen and 50% propolis or 100% propolis capsules which cost twice as much.

Asked why I don't just use my own propolis, I answer that first of all I may react with a sore mouth and secondly it may well be that the propolis packed commercially is more refined and one knows how much he's getting. But most other beekeepers with whom I have talked use their own propolis with excellent results. And when and if the capsules fail, the raw stuff seems to be swifter and surer. Another factor for the com-


**Cosmetics with addition of bee's products shown at Apimondia. 1979.**

mercial is that from the northern countries may have more "ingredients" than that from local sources.

There is an interesting little anecdotal book, *The Natural Product, Propolis, The Way To Health* by K. Lund Aagard which reports a series of five experiments involving 16,000 people in Scandinavia. The results which he reports for the curative effects of propolis are based on testimonials from 220 letters chosen at random from his study group. Those letters report improvement or cures of a very wide range of illnesses by using propolis. But somewhere along the line I read that propolis is **not** a panacea but is especially effective with sore throats, colds, the flu, and respiratory problems in general including sinus. The author relates the sore mouth that I experienced as being an occasional occurrence and recommends that the propolis be removed for half an hour in case this starts, and then resume chewing.

Aagard, a government official in South Zealand, was presented a hive as a going away gift by a beekeeper friend when he was transferred to North Zealand. For those of you who don't recognize it, Zealand is the largest island of the kingdom on Denmark on which is the city of Copenhagen. Aagard became one of those hobby beekeepers who develops a keen interest in the bees, reads a lot and is a constant and good observer.

A beekeeping friend trying to clean propolis stains off his equipment with water got a yellowish solution that ran and stained the hive further, but the bees seemed to like it. He reported this to Aagard who tried the same thing and found that painting the hives interior with such a propolis solution did indeed seem to please the bees.

In 1966 he read a report of R. Chauvin's described below and began to save propolis. In 1967 finding himself coming down with a sore throat and fever, he got up and ground a "goodly quantity" of propolis in a mortar, added ¾ cup of hot water, then filtered the resulting liquid through a coffee filter paper and drank it. He reports getting up well the next morning.

Prof. Remy Chauvin (R. Chauvin, *Traite de biologie de l'abeillel.* Masson et cie edit., 1968) did comprehensive research on bacterial cultures parasitic to insects. He found that honeybees just didn't react to any of the bacterial or viral cultures used. After repeating his procedures several times he concluded that there was something special about honeybees. The amazing fact that whatever protected them was 100% effective made the discovery still more important because antibiotics do not posses this quality and allow bacteria and viruses to gradually build up a resistance causing a consequent ineffectivity of the antibiotic after a short time.

During this research it was reported that the honeybee has at least seven types of antibiotics: Its own self-protective covering, honey, wax royal jelly, collected pollen, resin glue (propolis) and even the bees' own defensive poison was found to be strongly antibiotic. He states that with 50-60,000 bees in an effective space of 50,000 cu. centimeters it is essential to have some form of protection against micro-organism in order to survive. According to him, **this protection** explains why the honeybee has undergone no appreciable change in its structure through the millions of years of its existence.

Personally, I have a great deal of trouble chewing it in the front of my mouth and am very quickly chewing it on the, back teeth where it sticks to the teeth and dental work in an annoying way. But in the end chewing a piece of bread will get if off and enable one to swallow it. I find about half an hour to be correct time. Aagard states that 1.3 gms. should be the daily dose. Donadieu corroborates this and adds that 20 gms. should provide a cure. Among Aagards testimonials is one reporting that 100 gms. cured some chronic condition.

He states that there are no contradications except the sore mouth that some of us experience from raw propolis and equally rare intestinal disturbances. I have already given my hypothesis that such reactions may be due to Terramycin used for foulbrood prevention getting into the propolis. He advises that if there are no results after two or three weeks one ought to suspend therapy and look for other treatment.

After successfully beating off any and all colds, flu, or sore throats for 2½ years by using NORDISK capsules, the 50% pollen 50% propolis ones, I began to have a laryngitis due to exhaustion but didn't start propolis at the first sign and it almost got me. Two or three days into it I went down and got my usual capsules and started taking them. When I didn't get a result overnight I went down to our famous Chinatown and got a box of Peking Royal Jelly and started that. The difficulty didn't go beyond my larynx but I was facing a lot of public appearances including lectures so in desperation I chewed a good big wad of raw propolis and that seems to have turned the tide. Within an hour my voice was improving. I continued the capsules, the royal jelly, and an occasional piece of raw propolis for a total of six days well past any difficulty.

I should say a word about Peking Royal Jelly available in San Francisco's Chinese herbal shops for $5.50 for a package of ten 10cc vials. Each contains 250 mg. of fresh royal jelly together with 60 mg. of

Dangshen (Radix codonopsis pilosulae) and 40 mg. of Gouqizi (Frutus lycii). I learned about this from a Chinese friend who described it as a super tonic. Which it is. Whenever I almost got a cold it was because, among other things I was physically run down. On each occasion I took a box of the royal jelly, which lasts for ten days at one vial a day to help give the system resistance.

Usually I buy propolis only when I feel a cold coming on, which is about four times a year. But I never leave home without to travel! Then I take two capsules a day because I am most likely to succumb to infection in a foreign place. So far it has worked. It is most important to take it at the **first sign** of trouble.□


**Jugoslav Exhibit. Products are well packed with good explanatory labels.**

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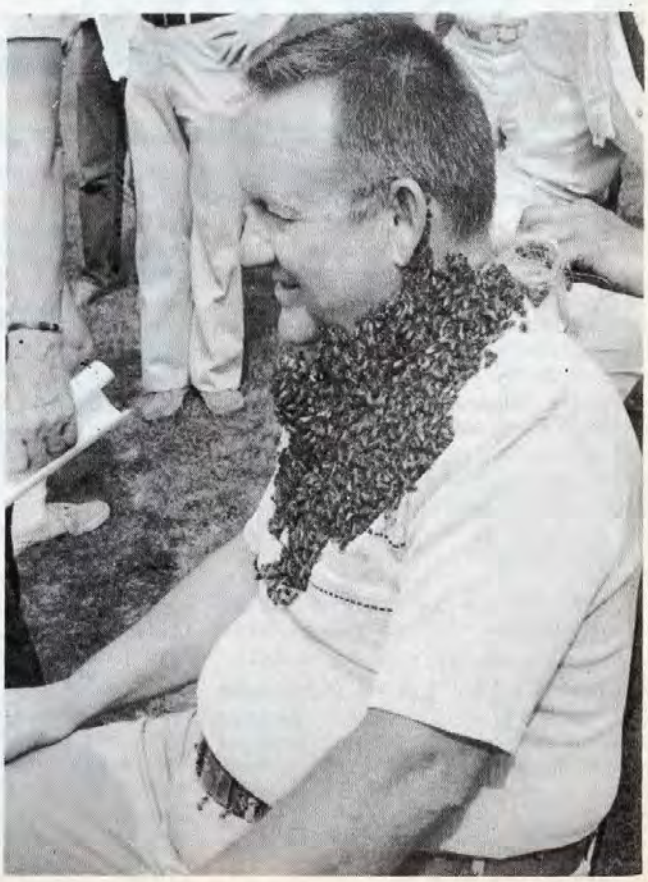
# Over 600 Attend E.A.S. Conference in Morgantown, West Virginia



**Jack Matthanius, a long time supporter and leader in the Eastern Apicultural Society here wins the bee beard growing contest at the conference in Morgantown, West Virginia. The bee beard once thought of as an unnecessary stunt is being performed more often by bee groups usually with local T.V. stations participating since beekeepers find it more and more important to prove to the public that honeybees are not killers and that bee banning ordinances are not necessary. At this event, hundreds of people were surrounded by thousands of flying bees. If anyone was stung we didn't hear any complaints, however, this sort of thing definitely is not for the inexperienced.**

**Matt Scott (right) newly elected President of the Eastern Apicultural Society, talks with (right to left) immediate past President, Jim Amrine, E.A.S. student. Apiculture Award winner, Alan Bolton of the University of Florida and the J.I. Hambleton Award winner for outstanding bee research Tom Rinderer of the U.S.D.A. Baton Rouge laboratory. Next years' E.A.S. conference will be held in Orono, Maine on the University of Maine campus near Bangor, August 10-13.**


**More and more beekeeping groups are indentifying their members and supporters with "iron on" or sew on patches for cap or jacket. Here are two recent additions.**

Enthusiasm for beekeeping was once more demonstrated as over 600 people attended the Annual Eastern Apicultural Society Conference in Morgantown, West Virginia, August 2-7, 1982. The meeting was preceded by a short course for beginning and advanced students.

The E.A.S. includes membership from the Eastern United States. The secretary is Mrs. Liz Rodrigues, 157 Five Point Rd., Colts Neck, New Jersey 07722.

Next years E.A.S. Conference will be in Orono, Maine, August 10-13, 1983.

**American Honey Queen, Kari Olson of Minnesota and West Virginia Honey Princess, Christ Altman, denied bee beard wearer, Jack Matthanius, of New Jersey, a kiss, but all those bees haven't caused Jack to lose his appeal for Cynthia Ott, New Jersey Honey Queen.**

# Life And Social Behavior Of The Honeybee (*A. mellifera*)

**By WILLIAM STACKPOLE**
**Brookfield, WI**

THERE ARE SEVERAL races of the common honeybee, (*Apis mellifera*). The European or black bee is found throughout northern Europe, from the Soviet Union to Great Britain. The yellow or Italian bee is the most abundant and most widely used commercially. The other commmon race is the Caucasian, originating from the Caucasus mountains.

A colony of *Apis mellifera* typically consists of at least several thousand and as many as 50,000 individuals. Of these there is one queen, a few hundred drones, and thousands of workers. The queen and workers are diploid females, while the drones are haploid males. These three castes of bees each have their own characteristic form of development. All eggs originate from the single queen. The female workers are inhibited from reproductive behavior by exposure to a pheromone which is released by the queen (Boch and Morse 1979). a newly hatched queen will venture out on several mating flights and may copulate with many different dronew on each flight. A queen will typically copulate a total of 17.25 times (Page 1980) after several flights and will have enough sperm stored to fertilize its eggs for its entire life. The eggs are whitish, extremely small, and fingerlike in shape, and are laid one per cell in the brood comb.

Drones develop from unfertilized eggs, while female workers and queens develop from fertilized eggs. The females' caste is determined by the type of food they receive during development. For the first three days of development all larvae receive a special food known as royal jelly. The caste determining property of this food has not been isolated, but it is known that the other components are mostly pollen and nectar. After the third day, those eggs which will become workers are fed in smaller amounts and the proportion of the nectar and pollen components of the food is increased. The eggs that are to become queens continue to be fed large quantities of royal jelly throughout their development. Another difference in the rearing of the queen is that it is raised in a larger, vertical cell, whereas, worker larvae develop in smaller, horizontally oriented cells. Drones are also reared in horizontal cells, but are easily distinguishable from worker brood by their protruding cell cap. This cap is necessary to provide room for the drone's massive head.

Although the duration of stages varies somewhat among castes, larval developments are similar for all three castes. The small whitish larvae go through five stages before entering the pupae stage. The pupae resemble adults but are whitish and have folded appendages. The total development period from egg to adult lasts about 16 days for a queen, 21 days for workers, and 24 days for drones. Newly hatched adults are recognizable by a "fuzzy" appearance and mikly colored wings.

The adult bee body is divided into the characteristic three segments of the insect (head, thorax and abdomen). The mouth parts are of the chewing and sucking type. The maxillae and labium of the mouth form a probocis that is used in collecting nectar, transferring food to other bees, and sensing pheromones. The hind legs have specialized hair on them which is used to carry the collected pollen. The sting, found only on the female of the specie, is used for defense. It is located on the lower abdomen and it thought to be a modified ovipositor. This would, of course, explain its absence in the male. The honey sac of *Apis mellifera* is highly expandable so that large amounts of nectar may be carried to the hive. The rectum is also very elastic. This is a necessary adaptation, since bees do not defecate while they are confined to the interior of the hive during the winter months. Bees have several glands located in the head, thorax, and abdomen. These glands produce wax, food for larvae and various pheromones. The pheromones produced have been shown to be a means of identification between a queen and the workers of a colony (Boch and Morse 1981). The wax glands are located on the lower or ventral side of the abdomen over segments IV to VII. Poison glands associated with the sting are located in the sting chamber at the anterior of the abdomen enclosed between the tergel and sternal plates of segments VII.

Worker bees have a type of multivocational lifestyle comprised of distinct stages (Jaycox 1976). The first three days of adult life are spent eating and moving about the comb. The 3rd to 6th days are spent feeding older brood, and the 6th to 13th days are used to feed new larvae. The 13th to 18th days are the period of peak wax production, so comb construction is the major activity in this period. The 18th to 21st days are spent fanning the hive, cleaning brood cells and storing pollen. After the 21st day, the adult bee begins outside activities such as foraging for nectar and water (Jaycox 1976). A certain amount of flexibility in this time table exists.

Drones are much larger than workers, with two large eyes that almost meet in the middle of the head. They are helpless and must be fed and cared for by the workers. Their only function is to fertilize the queen. Consequently, the number of drones in a colony is adjusted to the conditions surrounding the queen and her functioning. Most drones are allowed to starve if nectar flow slackens or is cut off (Free and Williams 1975).

In climates with seasonal changes, honeybee colonies follow an annual cycle of development which is influenced by these seasonal changes. The colony size grows rapidly in the spring, once cluster temperatures can be maintained at 35°C (95°F) (Jaycox 1976) and will reach a maximal number of about 40,000 in-

dividuals in early July (McLellan 1978). The brood maximum typically occurs three weeks prior to the peak in adult population (McLellan 1978). In late September, in temperate zones, clustering begins and mean colony size falls to about 13,000 adults (McLellan 1978). Although numbers are reduced, bees remain active within the cluster throughout the entire winter. The cluster will form when temperatures within the hive fall below 14°C (57°F) (Jaycox 1976). The cluster contains two distinct divisions which become more compact as temperature falls. Temperature is kept relatively constant in the cluster, as bees with lower body temperatures in the outer perimeter continually trade positions with the warmer sphere on the inside. In the spring, when interior cluster temperatures again can be maintained 35°C (95°F) the queen resumes laying and the cycle is repeated. Food storage also follows this seasonal cycle. The amount of honey stored increases throughout the summer until it reaches the maximum amount attainable under existing conditions at the end of the foraging season (McLellan 1978). The amount of pollen stored reaches a maximum of 2 kg. (4.4 lbs.) at time of maximum brood and declines to about .75 kg. (1.65 lbs.) for overwintering (McLellan 1978).

Perhaps the most conspicuous phenomenon in colony development is swarming. Swarms occur when a new queen is reared in the colony and about half of the colony workers leave with the original queen to form a new colony. Although there is no definable relationship between queen rearing season and swarming, it is evident that some type of relationship does exist (Caron 1981). According to Caron (1981), more swarms occur in the latter part of May and early June in the northern states when colony size has peaked and overcrowding occurs. This is, in most cases, also the period when an abundant nectar supply is about to begin. Page (1980) has hypothesized three relevant parameters affecting fitness leading to swarming: (1) The rate a colony can increase its worker population and divide, (2) the timing of colony division to best exploit the seasonal resources for colony growth and maintenance and (3) the size of the colony at the time of division. Swarming is the bees' adaptation for dispersal. Also, though I did not find any literature to verify this, I believe that Christian's hypothesis on stress could be applied to swarming activity.

Related to swarming is the ability of worker bees to distingusih between their own queen and a queen from a foreign colony. According to Boch and Morse (1981) this discrimination is accomplished by detection of pheromones. They observed that when workers find their own queen, they expose their scent glands and fan their wings to disperse the Nasanoff pheromone. This attracts more bees from the queen's colony. Boch and Morse (1981) were able to induce a swarm to move to a foreign queen by placing artificial Nasanoff pheromone near the foreign queen. Boch and Morse (1981) also caused swarms to choose foreign queens by feeding the swarm scented syrup. They concluded that the bees' chemoreceptors were swamped by the syrup's odor and they could no longer distinguish between foreign and familiar smelling queens. Other researchers have suggested that queens are identified by colony odors that are peculiar to each colony. Boch and Morse (1979) however, have shown that discrimination can occur based on physical characterisitics of the queen. In addition to pheromone distinctions determined in their 1981 study, Boch and Morse (1979) have shown that other physical characteristics, such as a paint spot can be used by workers to identify their queen.

The honeybees' most unique and complex behaviors are related to its foraging activities. Groups of mature bees will usually depart on foraging trips about every 45 mins. during the morning, but will spend less time in this activity during the hotter part of the afternoon (Harville and Lackett 1978). Most foragers spend the afternoon hours fanning the hive. Foraging activity is well coordinated, with individual bees returning to the hive and communcating the location of sources of pollen and nectar to other workers. This is done through a dance. There are several types of dances, such as the tailwagging and grooming dances (Gahl 1975). The shaking dance or doso-ventral abdominal vibration (D-VAV) is the most significant in communicating the location of food sources (Gahl 1975). Gahl (1975) observed that the shaker makes contact with another bee that remains motionless during the shake and that the shaker may continue to shake several other bees in a "shaking run" across the comb. There appears to be an age relationship between the shaker and the bee shaken with the shaker almost being older (Gahl 1975). This implies some means of age discrimination among members of a colony.

In transmitting the location of nectar sites, the foraging bee is able to specify the food source coordinates in three dimensions. According to Wellington and Cmiralova (1979) bees recruited by a single scout can pinpoint the height of a source of food they are seeking as accurately as they can specify its distance from the hive, and more accurately than they can pinpoint its direction over short distances. Since bees nest above the ground, this ability to pinpoint food in the dimensions of distance, direction and height is essential. Wellington and Cmiralova (1979) believe that the sounds produced during dancing, rather than the movements themselves, may be used to communicate locations. They point out that it would be easier for potential recruits to keep in auditory contact than to keep in visual contact within the dark hive.

Once nectar is gathered it must be manufactured into honey. Nectar is mainly a water solution of the sugars fructose, glucose and sucrose in various proportions. The concentration of sugar varies from 4 to 60% depending on the type of flowers and climatic conditions. The honey produced from different sources will have distinct differences in color and taste. For instance, in the midwest, the earliest honey is made from dandelion nectar and has a clear to light yellow hue. Late in the summer, honey may be manufactured from buckwheat and will have a brownish color and almost bitter taste. Bees will usually not gather nectars with sugar contents below 15% (Jaycox 1976). To transform nectar into honey, bees use enzymes to break down the complex sucrose into the simpler glucose and fructose. Water is then removed through evaporation until the sugar content reaches about 80% (Jaycox 1976).

One other interesting social behavior of *Apis mellifera* that should be mentioned is their altruistic defense of the colony. There are always a few bees that remain positioned around the entrance of a hive to guard its contents. Since the sting is barbed, it can not be removed from a victim without resulting in the loss of much of the bee's internal organs and consequent death. This altruistic behavior is an excellent example of the theory that as the number of shared genes in a kin group increases, a proportional increase in altruistic acts occurs. Since all the individuals in a colony of bees are offspring of the same female, they all share at least half of their genes.

Although this examination of the life and social behaviors of *Apis*

*mellifera* has only touched on some of the more complex aspects of this social insect, it has led me to have an even greater appreciation for this industrious invertebrate. □

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## NAOMI M. YOST

**NAOMI M. YOST,** 70, of Medina, Ohio died Thursday, August 12, 1982. She is the retired Advertising Manager of *Gleaning In Bee Culture*. She was also the linotype operator who set most of the copy for *Gleanings* for 42 years. She had been retired for the past four years. She is survived by her husband Edger, a son Ronald of Lexington, KY and three grandchildren.

Many readers who subscribed to *Gleanings* several years back will associate her name with the staff listing and remember her kindly voice when arranging for advertising in *Gleanings*.

# Obituaries

## HENRY W. WEATHERFORD

**HENRY W. WEATHERFORD, SR.,** died Friday, July 9th in Alexandria, VA. Mr. Weatherford was a member of the Virginia State Beekeepers Association and was a regular contributor to *Gleanings In Bee Culture* for a number of years. He is survived by his wife, Kathryne, a son, two daughters, grandchildren and a great grandchild.

## SEYMOUR E. BAILEY

**SEYMOUR E. BAILEY**, age 74 of Columbus, Ohio died Thursday, August 26th. Mr. Bailey was the State Apiarist of Ohio for 28 years. He was graduate of The Ohio State University and was named Ohio Beekeeper of the Year in 1975. He had been in poor health for several years but managed to attend some beekeeping meetings to greet and visit with his many friends in beekeeping. He is survived by his wife Lillian A. Bailey, several brothers and sisters, daughter and son and several grandchildren.

## Siftings

By CHARLES MRAZ
Box 127
Middlebury, VT 05753

*(Continued from page 569)*

medicated syrup. That is one joy I want to avoid, feeding sugar syrup to bees for any reason. It is an expensive, dirty, miserable job. It is much cheaper, easier and better for the bees to leave on a full super of honey.

Some queen breeders advertise the fact they feed Fumidil. This to me, is a confession that their bees are susceptible to Nosema and they will always need to be fed Fumidil to survive. It would make more sense to me to have bees resistant to Nosema and advertise the fact they do not have to be fed Fumidil. More attention should be made to produce bees resistant to these problems. There is no question however, if you do have a Nosema problem, you must feed Fumidil or else lose all your bees. Under such conditions it is essential, but beekeepers should be consicous of the fact in the long run the best controlling factors for disease control where possible, is with resistance to the disease. It is not easy, first there must be a source of disease resistant strains. They must then be developed and maintained through the years, that can be a difficult problem. No question the big advantage with using drugs for controlling disease is that it is fast and easy, as long as it works. It is not an easy choice to make.

It is hard to believe another summer is almost over and the winter is on its way. When there is no honey crop for all the summers hard work that makes it a hard winter. There is always next year, to give us hope for a good crop of honey.

# News and Events

### GEORGIA
### Georgia Beekeepers Association, Inc.

The Georgia Beekeepers Association's annual meeting will be Oct. 8 and 9 in Valdosta, Ga., at the Lowndes County Civic Center, U.S. Hwy. 84 East. Registration begins at 6 p.m. Friday and will be followed by a barbeque supper. After the meal Dr. David Fletcher of the University of Georgia will speak on his experiences with African bees in South Africa. Other speakers will cover topics of interest to commercial and hobby beekeepers alike. More information may be obtained by contacting the association secretary, Cecil Shepard, 3204 Westmart Lane, Doraville, GA 30340 Ph. 404-491-3734.

### WISCONSIN
### Wisconsin Honey Producers

The 1982 convention of the Wisconsin Honey Producers will be held on Friday, Nov. 5th and Saturday Nov. 6th in Milwaukee at the Ramada Inn, 11811 West Bluemound Road. A full days program is planned for each day.

### TEXAS
### Texas State Beekeepers Association

The Texas State Beekeepers Association will hold its state meeting in Fort Worth on November 4-5-6 at the beautiful Metro Center Hotel in downtown Fort Worth. The "Bee Buzz" social will kick off the meeting on Thursday evening. After the "Bee Buzz", everyone is invited to go honky tonkin. Tentative reservations have been made at Billy Bob's Texas--the world's largest honky tonk. If interested, make your reservation now.

The meeting will begin at 9:00 a.m. Friday mornig with an excellent program awaiting you. Friday closes with the queen coronation dinner and dance. Music will be provided by "Over The Hill Gang".

The meeting will continue Saturday morning at 9:00 a.m. 'til noon. The business meeting will begin at 1:00 p.m. Saturday. This is open to all members of the Texas Beekeepers Association. While the main meeting is going on, a hobbyist school will be held in an adjacent room. Mr. Tom Spikes heads up a program designed just for hobbyists, "The Bee Season". If interested, contact Mr. Tom Spikes.

This meeting promises to be one of the best ever, so make plans now to attend. For further information, contact Mr. Frank McAnulty, 4201 So. Cravens Road, Forth Worth, Texas 76119; phone 817/429-1046.

### WEST VIRGINIA
### Honey Festival

The West Virginia Honey Festival will be Oct. 22, 23, and 24 at Parkersburg City Park, West Virginia. Write West Virginia Honey Festival, Box 2062, Parkersburg, West Virginia 26101, for more information.

### MICHIGAN
### Beekeeper's Association

The annual winter meeting of the Michigan Beekeepers Association will be on November 5th and 6th, 1982 at Schoolcraft Township Hall, Kalamazoo, Michigan.

The cost for registration is $2.00 for members and $3.00 for non-members. The cost of registration does not include the cost of the catered Friday dinner or Saturday lunch. A reduced motel rate is available for all members at the Southgate Motel.

### INDIANA
### Michiana Beekeepers Association

On October 17, 1982, the Michiana Beekeepers' Association will meet at Run Village Park Nature Center, 2626 S. Gertrude, South Bend, Indiana. (Ph. 284-9455). To reach the Nature Center proceed North on U.S. 31, turn West at Ewing for a few blocks to park entrance. Nature Center within, watch for signs.

There will be a slide program on the development of hybrid bees and a discussion on breeding disease resistant bees. Also wintering tips.

### IOWA
### Iowa Honey Producers Association

The Iowa Honey Producers Association will meet at the Starlite Motel, Fort Dodge, Iowa on Friday Oct. 15th Out-of-State speakers will include Dr. Basil Furgala discussing Nosema and it's effect on bees, James Smith of Yuma, Arizona who will talk on moving bees and cooperation in use of insecticides and JoAnne Weber who will speak on promoting honey.

### ILLINOIS
### Cook-Du Page Beekeepers' Association

The Cook-DuPage Beekeepers' Association will hold its Annual Banquet Saturday, October 16, 1982, at the Buckingham Steak House, 501 Plainfield Rd., Willowbrook, Illinois. The social hour will begin at 5 p.m.,and dinner will be at 6 p.m. The featured speaker will be Dr. Orley Taylor from the University of Kansas, who will speak on "African Bees -What They Are, What They Aren't, and How They Affect Beekeeping in the United States." Dr. Orley Taylor is a Professor of Entomology at the University of Kansas, and is one of the nation's foremost authorities on the subject. Tickets are $12.00 per person, and must be purchased by October 9, 1982. For reservations or further information contact Maxine Mills, Rt. 2, Joliet Road, Lemont, Illinois 60439 — Phone (312) 739-1922, or call Keith Meiser, at (312) 968-3031

### MASSACHUSETTS
### Massachusetts Federation of Beekeepers

Berthier W. Richardson of 241 Pomogussett Road, Rutland, was presented the Massachusetts Beekeeper of the Year award by the Massachusetts Federation of Beekeepers at the annual summer meeting held at the University of Massachusetts campus in Amherst.

Richardson, who has been beekeeping for 26 years, was nominated last year for Beekeeper of the Year in the Worcester, Norfolk and Middlesex counties.

He is a member of the Worcester and Norfolk County Beekeepers Associations, the Massachusetts Federation of Beekeepers and the Eastern Apicultural Society of North America Inc.

*(Continued on page 582)*


**Strong Hives This Fall + FUMIDIL-B = Strong Hives Next Spring!**

Plenty of stores, good ventiltion, and FUMIDIL-B — **the Basic Three** — that's what it takes to bring your hives through the winter in top shape.

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Send for a free catalog for the listing of your nearest Root Dealer.

## Questions and Answers

*(Continued from page 556)*

**few dandelions or spring feed for the bees, although we seem to have lots of wild flowers but feel dandelions would help. This is not farming or agriculture land so would bother no one.**

**a. Would it be unwise to plant dandelions and should they be planted in meadows or on hillsides?**

**b. Would it be unwise to plant this so called weed?**

**c. Where can the seed be purchased?**

**d. What is the best time to plant it?**
**L.W., Idaho**

A. Sweet Clover is a legume and to get a good seeding of any legume requires that the soil be neutral or above in pH, often needing lime.The area where the sweet clover is already growing may have received lime (calcium oxide) or crushed limestone by one means or another before the sweet clover became established. It would also help germination of the seed if the seed is first treated with and inoculation material. This can be purchased when buying the seed and treatment given before sowing the seed. Preparing the seed bed by cultivation may help if this is possible. Be sure the seed is not being carried away by rain before it germinates which often happens on sloping ground, on a hard seedbed. Give the seed time to become exposed to frost or freezing, which helps germination.

Bear grass is not listed as a honey plant in any of our reference books. I recently seen it in Glacier National Park in Montana for the first time.

There is only one certain way of holding hives in place and that is to first strap them individually using metal or plastic banding. Tightening devices must be used. Load the hives side by side and no higher than is safe. The compact load should then be chained, strapped or roped securely to the truck or trailer bed so that no movement whatsoever is possible. The combs and bees should ride well but watch for loose frames that may begin to move about as the road gets rough. Load the hives with entrances face to face if they are not screened.

I have the feeling that if your environment was suitable for dandelions to grow they would be in your region by now; they seemed to have reached nearly everywhere else in North America. I doubt if it would be wise to attempt to sow seeds. Watch for suggestions on some bee nectar and pollen plants that may be planted for forage in the *Gleanings* column "Bees and Gardens".

# News and Events

*(Continued from page 579)*

Richardson, a 1923 graduate of Babson College, has studied beekeeping since 1952 on his own.

He has appeared on several area radio and television talk shows to discuss beekeeping and has written several articles about beekeeping for local newspapers.

Richardson raises queen bees and sells a limited number, and produces honey, comb honey, cut comb honey and round comb honey.

### NEW JERSEY
### Southeastern Beekeepers & Sussex County Beekeepers

The annual joint meeting of the Southeastern Beekeepers Club and the Sussex County Beekeepers Club will be held at the home of Tom and Helen Webb, Rt. 519 , Sussex, New Jersey, Sunday, Sept. 19th, starting at 1 p.m. Those attending are asked to bring a covered dish to be shared. There will be a guest speaker followed by a tour of Tom's honey house. Visitors welcome.

### MASSACHUSETTS
### Essex County Beekeepers Association

Beginning on October 2 and continuing through October 11, 1982, the Essex County Mass. Beekeepers' Association will sponsor the 101st Annual Beekeeping & Honey Show at Topsfield Fair, America's Oldest County Fair.

The members of the Essex County Beekeepers' Association have sponsored the Beekeeping & Honey Show at Topsfield Fair since 1923 and since that time, it has grown to be the largest such show in the Eastern U.S.

With three divisions, twenty sections and 102 classes, there is ample opportunity for beekeepers to enter the competition for the over $2,000.00 in prize money, trophies and ribbons which will be offered to the winners.

The Beekeeping & Honey Show is housed in its own building which has just undergone over $10,000.00 in renovations in preparation for the 158th Annual Fair. Topsfield Fair is the only major fair which devotes an entire building just to beekeeping.

In 1981, over 200,000 people passed through the building and viewed the huge variety of exhibits. There are displays of honey, beeswax, beeswax candles, mead, cooked products made with honey as well as exhibits of arts and crafts related to beekeeping.

Commercial exhibits of equipment of major beekeeping equipment manufacturers are presented as well as live demonstrations and educational movies will be shown to educate the public.

At the 1981 Topsfield Fair, more than two tons of honey as well as other bee related items were sold including cookbooks with the recipes of past prize winning items of cooking with honey.

Professional judges spend up to twelve hours judging the various exhibits displayed in the 1,800 square foot exhibition area which is housed in two exhibit halls within the Beekeeping Building.

Miss Kari Olson, 1982 American Honey Queen will be present to promote the use of honey and to educate the public in all aspects of the art of beekeeping.

William R. Wiley of Beverly Farms, Mass. past President of the Essex County Beekeepers' Association and past Secretary of Eastern Apicultural Society will be serving his twenty first year as Superintendent of the Show.

All Beekeepers in Northeastern areas are encouraged to visit Topsfield Fair and view this excellent show promoting beekeeping.

### KANSAS
### Kansas Honey Producers Association

The Kansas Honey Queen Contest will begin the Fall meeting of the Kansas Honey Producers Association to be held October 22-23, 1982, at the Downtown Ramada Inn, Topeka, Kansas, beginning at 7 p.m. on Friday evening. The business meeting and election of officers will be held on Saturday, October 23, 1982, together with other presentations and activities.

The Kansas Honey Producers Association invites beekeepers from Kansas and surrounding areas to attend the meeting.

### MARYLAND
### Maryland State Beekeepers Association

The Maryland State Beekeepers Association will be holding its annual Honey Show and Fall meeting on Saturday, November 6, at Western Maryland College in Westminister, Maryland. The very succesful format used for the honey and honey cookery show of the last few years will be continued, with special invitation to our

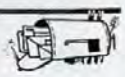
*(Continued on page 586)*


**Jim Conklin, with beard, is congratulated by Tom Webb who assisted with the beard.**

### NEW YORK
### Southeastern Beekeepers Club

A honeybee beard, sponsored by the Southeastern Beekeepers Club, was demonstrated at the Orange County Fair, Middletown, New York, Sunday, July 25, 1982. Jim Conklin, a Warwick, New York beekeeper with beard, is congratulated by Master Beekeeper Tom Webb, who assisted with the application of the bees. Jim reports that he had 16,000 bees on his chin and no stings. Tom didn't fare as well, getting 3 stings. The beard was held in conjunction with the annual bee booth at the fair.

## Gleanings Mail Box



*(Continued from page 558)*

L.W., Idaho on page 446, August *Gleanings* concerning making up splits without moving to new locations.

What I do, is if in late April or very early May I have some colonies that are really booming and may be showing signs of swarming, I move those colonies a few feet away, and in the place of each, I put on empty, single story hive.

I find the queen in the old hive and put her, with the frame of brood upon which she was found into the new hive, along with a couple of frames of mostly sealed brood with adhering bees. I add a couple frames of sealed honey and pollen to the new hive, and finish filling it with empty comb or foundation.

The old hive in its new location is requeened in the normal way. The field bees from the old hive will mostly enter the new and keep its stength up.

The bees in the old hive, losing most of the field bees, from the old hive will mostly enter the new and keep its strength up.

The bees in the old hive, losing most of the field bees, will quickly accept the new queen and will forget about swarming.

One can keep the extra hive for increase, or unite the two hives at the beginning of the main honey flow for a super crop.

Richard Testrake
33 Kellog St.
Erie, PA 16508

**Lisa Decker is being presented with an award by Ellsworth Gustafson for winning the Iowa Bee Essay Contest.**

## Lisa Decker is Iowa Contest Winner

LISA DECKER, Wapello County, Iowa was honored as the winner of the State of Iowa Bee Essay Contest sponsored by the Iowa Honey Producers Association (IHPA) at the award luncheon Iowa State University. 4-H conference in June 1982.

ELLSWORTH GUSTAFSON, Board of Directors, represented the IHPA and presented Lisa Decker with the award at the 4-H award ceremonies, ISU, Ames, IA.

## News and Events

*(Continued from page 582)*

friends in southern Pennsylvania. Entry forms and show rule guides are available from the Program Chairman, W. Van Aller, at 7623 Old Washington Rd., Woodbine, Maryland 21797. Honey/Cookery show entries will be accepted from 8:30 a.m. to 10:00 a.m.

Concurrently with the honey show judging will be a full program of topics of interest to hobby, sideline, and commercial beekeepers, along with the regular reports on current happenings and events concerning beekeeping and the environment in Maryland.

### MARYLAND
### American Apiotherapy Society

An interesting and varied program is scheduled for the Fifth Annual Symposium of the North American Apiotherapy Society on November 13, 1982. Dr. Stan Somerfield, a visiting scholar from New Zealand, will be describing his work with anti-arthritic properties of bee venom fractions. A paper contributed by Dr. Avshalom Mizrahi of Israel will be on his work with propolis. The variety of hive products from the standpoint of therapeutic use will be the topic of a presentation by Ann Harman. One highlight of the program will be some of the interesting clinical cases treated by Dr. Hermann Sander of New Hapshire. Other speakers will discuss the various aspects of venoms and arthritis.

If you need more information you can reach me at 301-253-5313 after about 4:30 p.m., or write to Ann W. Harman, 15621 Aitcheson, Laurel, Maryland 20707.


*(Continued from page 548)*

large clusters. Goldenrod starting to bloom in Early September.

**Region 4**

Bees have barely held their own since the second week in August in Minnesota. One beekeeper has extracted crop with a 125 lb. per colony average, which may be better than most may have. Increase in bulk domestic honey prices recently. Sales slow on large quantities of honey, but unsure whether slow because of the season or because of the economy. A general light, early frost August 26th ended honey flow in North Dakota. Crop has averaged around 120 lb. (estimated) per colony in North Dakota, fall rains are needed for the sweet clover. Many beekeepers moved from the dry areas into sunflowers. This is a long term trend but spray kills are a problem, in the east end of the state in the sunflower fields. Lack of farmer concern, pilot/applicator ignorance and beekeeper inexperience w/spray problems are complicating problem. Beekeepers must do more to educate toward grower-beekeeper communication and preventing bee loss.

**Region 5**

Early honey crop in North and South Carolina was moderate to poor. Large amounts of honey dew being stored in Piedmont sections of both states during the late summer. Abundant moisture and good fall flower growth point to probable fall honey flow. Bees have been slow to cap honey because of high humidity. A shortened tulip poplar flow and below average sourwood flow in North Carolina was due to weather conditions. Honey darker with higher moisture.

**Region 6**

Portions of Kentucky, especially the bluegrass section, received an excellent summer crop from clover the North Central region and the eastern mountains experienced a small crop. Fall flowers late and scarce. Rainfall variable, honey quality is light and mild in Kentucky and sales are normal. Prospects are good for fall honey flow in Alabama. Record amounts of honey have been turned over to CCC to satisfy 1981 loans.

**Region 7**

Very dry in Texas, cotton honey crop in west Texas panhandle looks good but spraying in sunflowers adjacent to cotton fields taking a toll of bee population. Queens crown beginning to bloom in early September. Bees in good condition. Honey sales good. Bees in good condition in Oklahoma with good fall honey flow in prospect. Cotton will produce good honey crop if weather remains hot. Extracting of soybean honey crop began in early September in Arkansas. Moisture content of honey is high. Good fall honey flow from goldenrod, aster, and spanish needle. Looks like honey crop will be 10-15% greater than last year in Arkansas. Honey moving rather slow in stores and packers not eager to buy at this time. Large producers will go to Commodity Credit Corporation for price because of cheaper imported honey available to packers.

**Region 8**

With extracting well underway in Colorado in early September the crop appears better than previously estimated. The honey is good quality, light and heavy bodied. Recent rains have renewed plant life and bees are packing brood nests. Many producers are putting honey on loan and this has created some shortages for packers. Consumer demand is good. Montana production should be better than 1981. Honey is of excellent flavor and color.

**Region 9**

Bottlers offering good prices for local honey in Oregon, up to 10-15¢ above regular. Prospects are good for a 1982 bumper honey crop in California. Demand for darker grades of new honey crop is light. California producers fail to redeem over 2.3 million pounds of 1981 honey crop under CCC loan program.

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

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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.

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# Master Beekeeper of Franklin County

Dick Bonney, Master Beekeepr and member of the Franklin County Beekeepers' Association discusses some fine points of beekeeping to an attentive group. Photo by E. B. Orchowski.

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