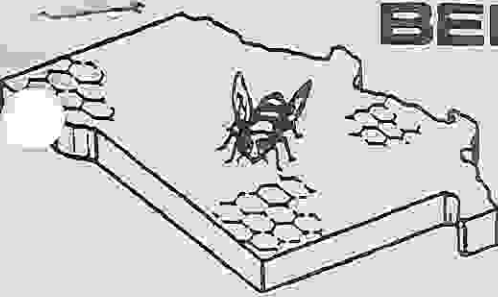


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VOLUME 25

QUARTERLY NEWSLETTER  
MARCH 1987

NUMBER 1

DEAR BEEKEEPING FRIENDS,

The Annual Spring State Meeting will be held on Saturday, March 21, at the Memorial Union Auditorium at the University of Missouri at Columbia. (See the last page of the newsletter for directions.)

The program for the meeting will feature

- 1) Dr. Joseph D. Moffett, a research entomologist USDA ARS Honey Bee Lab in Weslaco, Texas. He will present two one-hour talks—the "Current Status of Chemical Control of Tracheal Mites" and "Beekeeping in the United States".
- 2) Dr. James W. Johnson is an extension entomologist with the University of Missouri. He will address the "Importance of Pollination for Fruit Crops".
- 3) Dr. Flermoy Jones, our 1st Vice-president and an extension entomologist with the University of Missouri, will speak of "Beekeeping Programs for Youth".
- 4) At the time of publication, one afternoon session was still to be announced.

The complete agenda for the day is found on page 16 of this newsletter. Also page 16 contains the information for the Friday evening executive board meeting.

**NOTICE:** EACH AND EVERY LOCAL ASSOCIATION is expected to have at least one representative present at this Executive Board Meeting.

Suggested motels along with their rates and a map of their locations is found on page 17 of this newsletter. Please **BE SURE TO MAKE YOUR RESERVATIONS EARLY** because March 20, 21, and 22 are the dates for the State Basketball Tournament in Columbia!!

DUES . . . . . DUES . . . . . DUES . . . . . DUES . . . . .

1987 dues are now due!! The deadline is May 1.

If you are a member of a local association, your state dues of \$3.00 should be paid to your local association. The local association treasurer should forward your name with your complete address and zip code to the state Treasurer Mr. Jim Hausam.

If you do not belong to a local association, your dues are \$4.00 and are to be sent directly to Mr. Jim Hausam, Treasurer, Rt. 2, Box 93, Lincoln, Missouri 65338. Make your check payable to the Missouri State Beekeepers.

If your dues are not received by May 1, you will not be receiving the June newsletter.

\* \* \* \* \*

Taken from the September 1986 The Bee News.

#### "Bees Found To Manufacture Plastic"

Females of a wild bee species secretes a polyester plastic compound as they raise their young. The bees, genus *Colletes*, pollinates crops but produce no honey. They secrete and form the polyester as a brood sac to hold larvae as well as pollen and nectar for feeding the newborn. The brood sac is buried in an underground nest and looks somewhat like a plastic bag. Chemical analysis showed that the sac was made from a polyester compound but is completely free of petro-chemicals. From the "Bee Buzzzer".

\* \* \* \* \*

Taken from the September 1986 The Bee News.

#### "Tracheal Mites Found in Manitoba"

Honeybee tracheal mites have been discovered in Manitoba and traced to a shipment of package bees from South Carolina. This is the first reported introduction of mites into Canada, except for a mite research project in northern Saskatchewan.

\* \* \* \* \*



# Missouri Cooperative Extension Service

University of Missouri & Lincoln University

REGION 9

3

Dunklin, Mississippi, New Madrid, Pemiscot,  
Scott & Stoddard Counties

Delta Center  
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Dear Beekeeper:

Here are some seasonal tips for spring management in your colonies. Some of these things should have been done already. These tips are a little late but many are still appropriate. I will try to be more timely with the summer tips on seasonal management.

## A. March

1. Reverse the brood chambers if most of the brood is in the upper chamber.
2. In two weeks when the upper chamber is filled with brood, reverse them again. Reversing every two weeks during the spring season helps prevent swarming.
3. Requeen colonies at least every other year during the months of March or April. Before placing a new queen in the colony, remove the old queen and all swarm cells. Place the new queen over two frames of brood. Recheck the colony in two weeks to see if eggs are present and the new queen has been accepted. Order queens clipped and marked for easy location and identification. Clipping can aid in preventing swarms.
4. Destroy any swarm cells in the hive. Swarm cells are queen cells and must be destroyed every week to prevent swarms.
5. Inspect for diseases, and feed preventative antibiotics. Terramycin powder mixed with 12 parts powdered sugar and fed once a week for three weeks will prevent foul brood. Fumadil "B" fed 3 times (once a week) with sugar water prevents nosema disease.
6. Feed colonies as necessary.
7. Prepare shallow supers for use during the honey flow. Replace damaged foundations and clean the frames. Keep shallow supers fumigated with paradichlorobenzene crystals until 24 hours before they are placed on the colony.

-more-

## B. April

1. Feed colonies as needed. A strong colony will consume large amounts of honey and may starve before the honey flow. Feeding will stimulate population growth for maximum honey production.
2. Check brood chamber for disease and swarm cells. Destroy all swarm cells and recheck for swarm cells every week. Colonies will swarm if you permit queen cells to be capped.
3. Install package bees. A package will do well on new foundation. A package will get off to a better start with drawn comb and two frames of brood.
4. Add new foundation (1 to 2 frames) to the upper hive body in each hive. This will discourage swarming.
5. Requeening may be done at this time. A clipped and marked queen is easy to see and has less chance of swarming. Some apiarists prefer to requeen in the fall. Clip and mark all queens.
6. Add a super of drawn comb to relieve crowding. Also add honey storage supers as needed.
7. Divide colonies if you wish to increase the size of your apiary. Colonies that have a strong swarm tendency are good candidates for division.
8. Remove entrance reducers from all old colonies after the 15th of the month. A new package should have the entrance reducer in place until June.

## C. May

1. Add new supers as needed. If the super atop the brood chamber is one-half full a new one should be added. The additional super is placed directly over the brood chamber. Full supers can be stored on top so the bees can guard them until time to extract the honey. Keep empty storage space on the bees from now until fall.
2. Check for swarm cells every week. Remove all swarm cells.
3. Remove capped supers and extract honey. Return extracted supers to the hive. This allows the bees to clean them up and use the honey left in these supers.

If you need some advice, call Ray Nabors, (314-379-5431) or Flerney Jones (314-882-3637). Good Luck.

Sincerely,

*Raymond A. Nabors*  
 Raymond A. Nabors  
 Area Entomology Specialist

# Spring Management Begins with Spring Inspection

By ED WEISS

The very first thing in spring management is the spring inspection. That is really what we mean by spring management.

**Winter bees.** It all started about a year ago, between Aug. 20 and early October. The colony raised about 30,000 bees which became the winter bees. It was also a good time to requeen if you didn't have 30,000 bees in the hive. If your queen was not putting out eggs, and you didn't have young bees going into winter, the colony won't make it through the winter.

The winter bees are the bees which must make a colony for you in the spring using the honey and pollen reserves from the previous year.

You should have: 1. A good queen; 2. 30,000 bees, minimum; and 3. Ample pollen and honey reserves.

It is a good idea to make up a nuc during the swarming season (May-June), removing bees and brood, and keep a young queen in residence, in case you need to replace the old queen with a new one.

**For the New Beekeeper:** Here is what we are looking for when we open a hive.

1. The queen. The heart-throb of the colony is the queen. She will lay 1,500 to 2,000 eggs per day. An egg is laid by the queen. It is an egg for 3 days. If you wear glasses, you will need to wear them to see the eggs.

On the third day, the egg becomes the young larvae. It is very hard to see with the naked eye. On the fourth and fifth day it is still a young larvae, but it is getting bigger every day.

On the sixth, seventh and eighth day the larvae is much larger. It fills out the cell, and we call these the older larvae. They double their size every day!

On the ninth day the bees put on a beeswax covering on the cell. Then the larva becomes the pupa stage. You begin to see wings, eyes, color, etc., at this stage. This goes on for 12 days, for a total of 21 days. In summary we have:

Days	Stage
3	egg
3	young larvae
3	old larvae
12	sealed pupal stage

What this means is simple. If you see eggs, you know you have a queen. Finding the queen can be very difficult, especially if you don't know what you are looking for. It is easy to find eggs.

**Queen Evaluation:** Here is a procedure to help you understand how to evaluate a queen. This is a very rough estimate for an early spring evaluation of a queen:

- A. 3500 cells per side of a frame
- B. 1200 to 1500 eggs daily from a queen
- C. 2 to 3 days of laying per side of frame

D. Therefore, it takes roughly 4 days for a queen to fill a total frame.

E. If we divide 21 by 4, we have 5. This means that a colony with five frames of brood in March (in Connecticut) would be excellent:

1 cellant = 5 frames

Good = 3 to 4 frames

Poor = 1 to 2 frames of brood.

This gives you a way of evaluating your queen.

When to evaluate the colony: You should wait until the temperature is at least 50° to 60° F, with absolutely no wind, especially if the temperature is closer to 50°. If there is any wind, you will have trouble evaluating your hive. If there is no wind and the sun is out, you can check the brood. If it suddenly cools off, you may have chilled brood.

Use the sun to look at the brood, letting the sun shine into the cells of the brood frame. You are looking for eggs - if you see them you know you have a queen.

If you see one egg per cell you have a good, healthy laying queen. But if you see 2 to 10 or more eggs per cell, you either have a drone laying queen, or a large number of laying workers - these eggs will all turn into drones!

And remember, also look at the bottom of the cells, checking for AFB scale, fastened to the bottom.

**The Winter Cluster:** When the colony cluster enters the winter, it is formed at the lower part of the hive.

The bees move up during the winter, because they cannot move outward, through the beeswax. They eat honey and move up. In early spring, if you don't find bees at the top of the colony don't be upset. They may not have reached the top because they were eating more slowly. But if they are at the top of the hive, they are just about to the end - they need food soon.

When the bees have reached the top, the bottom hive body will usually be empty. Here is what you should do:

1. Put the cover on the ground, upside-down.

2. Lift off the top box, leaving the inner cover on, and set this at cross angles on the cover on the ground.

3. Set the bottom box on the top box, and cover with a sheet of newspaper to prevent robbing.

4. Work on the bottom board. Many people ignore that the debris from the entire winter will pile up on the bottom board, and it really helps the bees to clean out this. Remember that bees produced the previous summer have died over the winter, and they are often at the bottom of the hive. Scrape the bottom board clean of all debris. You will want to do the same with the inner cover. Then re-assemble the hive.

**INSPECTION QUIZ:** Here are the questions you should ask yourself as you inspect a colony during the spring:

1. Is there a queen? If you see one egg per cell, the correct answer is yes.

2. Is there a proper ratio between eggs, larvae and capped

brood? If the season is progressing normally, you should have the approximate ratio of 1:2:4 for eggs: larvae: pupae (sealed brood).

3. Does the capped brood look plump and robust, or there sunken cappings and perforations? If there are perforations in the cappings, this may be an indication of American foulbrood.

4. Are the bees clustered on 3 or more frames? If the colony is too small, you may want to combine it with another colony, or boost it with bees and brood. Or you may want to requeen.

5. Is there brood on 2 or more frames (both sides of the frames)?

6. Are there at least 2 frames of honey, preferably more, located to the sides of the brood area?

7. Should you feed anyway? Certainly -- syrup and pollen feeding will speed colony development.

Reverse the two deep hive bodies if the bees have not gone down into the bottom box on their own. Do this 2 or 3 times until you have distributed the brood, bees pollen and honey, throughout the two brood boxes. This reduces the likelihood of swarming.

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Widely known as the author of "The Queen and I, a popular beginner's book about to be re-released in paperback, western Connecticut beekeeper Ed Weiss is a popular lecturer on beekeeping. In his work, he stresses the basic aspects of beekeeping to his students and believes that new beekeepers need every step of an operation spelled out for them.

-Larry Connor

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## MANAGEMENT TO THE HONEY FLOW D. G. Peer

A considerable part of management involves checking colonies. When we check, how do we do it and what do we look for?

### Recommend Nine Frames:

We like to use nine frames in our brood chambers. This makes it unnecessary to first take out the outside comb before we can start. We can spread the combs a little and free the combs we wish to check. This results in a considerable saving in time and work and there is no danger of rolling or crushing the queen. The spaces between the combs should be equalized after checking the hive.

### Use Your Head as Well as Your Eyes:

What do we look for? We are looking for a number of things rather than one specific thing. We are checking the brood pattern. Sometimes we have to check for eggs. We are checking on the amount of pollen and honey, and we always keep an eye open for disease. Your reason for checking is to form an opinion as to whether the colony needs your help or not and you cannot form a proper opinion on the correct action to take unless you have all the facts. Simply ram-jamming through a lot of colonies that did not need your interference in order to look at queens is going to accomplish nothing. I doubt if many of us can tell a good queen from a poor one just by looking at them. A good queen can best be identified by her brood pattern. Your purpose in checking is to recognize problems and to intelligently solve them. Do not be afraid to sit down and take time to solve a problem. What you learn and what you do while checking is what is important; not the checking itself. Dr. Farrar has wisely said that the beekeeper is the bee's worst enemy and this is one thought we could take away from this course, if we take away nothing else.

### Pollen:

Pollen is very important to the bees and one should always check on a colony's pollen supply. A shortage of pollen can cause a queen to cut down on her egg laying. If the shortage of pollen was not noticed, one might blame the queen and replace her which would do nothing to help the situation but would probably make it worse.

### Disease:

Keep disease always in mind. For example, when we find a broken brood pattern and several eggs being laid in a cell, we look for a queen and put her through a nosems walkability test. This is by no means a scientific test but we find it works well for us. We place the queen on our hand. She should walk all over one's hand and even up one's arm if she is healthy. If the queen is infected with Nosema to the point where it is causing the broken brood pattern, the infected queen will walk very little. The infected queen may just sit on the hand and tremble, although this is not always the case. Look for brood disease and when you find it, sit back and do a little questioning. Determine how extensive the infection is and how long the colony has had the disease. If you can find scale then the colony has had the disease for some time. If you find less than five fresh cells, try to think back. The colony did not catch the disease yesterday. Think back a week or two and what happened then. Did you feed any honey syrup? Did you move them? Were they supered then? Were they robbing then?

### Weak Colonies:

Package colonies sometimes become extremely weak and yet you hesitate to double them. The two-queen system can be used to salvage the weak colony and develop its full honey producing potential without sacrificing good colonies.

Never butcher good colonies in an attempt to build up weak ones. You can place a weak colony over a real strong colony with a queen excluder between the two units and operate them as a two-queen colony up to or right through the honey flow. Remember the object of honey production is the filling of a maximum number of cans with honey and not the maintaining of a certain number of colonies. We always over order on packages over what we expect to put into the flow.

When combining two colonies, one can often set the weaker colony over the queen excluder and lose no queen. We find it best, however, to use the newspaper between the two units.

In spring, one can transfer combs of pollen and honey from colonies that are oversupplied to colonies that are short.

### Records:

Try to keep some records of yards and weather in order to acquire knowledge of what to expect from different locations. All locations are not identical and some colonies develop faster than others and experience the main honey flow earlier than others.

Knowledge of this sort will help you decide on when to move, which yards to move, and which yards to super first. A barometer and thermometer can be used to good advantage to determine the part the weather is playing. One must be prepared to change one's management as conditions change rather than proceeding blindly according to a pre-conceived plan.

### Equalizing Colonies:

Moving brood around can be hazardous if you have any brood diseases but it can be utilized under some circumstances when disease is not a problem. Shake the bees off the frame you are transferring to avoid moving the queen with the brood. Give some thought to the condition and needs of both the colony providing the brood and the colony receiving the brood. Give the weaker colony emerging brood rather than eggs and larvae because what the weak colony needs is more nurse bees not more brood to care for.

### Supering:

The rule to remember in supering is "when in doubt - super"! Do not wait until the white wax is showing on the cells near the top bars. In a good flow your colonies could be crowded and still not show this white wax. Heft a super and lift a comb or two out to see how full they are. It is better to take home a few light supers than to lose bees and honey because the bees had not enough room. We practiced top supering. The only time to bottom super is if you have gotten behind in your supering and the last super is almost full and the honey is being capped. Probably the majority of beekeepers delay too long in putting on the second and third super.

\* \* \* \* \*

### RADIOACTIVITY AFFECTS BEES

Taken from the Tara Beekeepers Newsletter, Richard Morris, Editor.

In Poland, a Baptist minister, whose church is 200 miles down wind from Chernoble, told me that even before Swedish radio began broadcasting reports of increased radioactivity, they knew something was wrong. The bees would not come out of their hives. Each day one "scout" bee would venture out. She was not allowed back into the hive on her return and was, in fact, killed on the threshold by the guard bees. When I left Poland last week, the bees were still in their hives. (Reported by Bill Mathman, In Touch Ministries, International Newsletter.)

## VARROA JACOBSONII O.

The mite *Varroa Jacobsoni* was first found on the Asian bee *Apis cerana* in Indonesia in 1904 and again in 1918. It was then found in the Philippines in 1963, USSR in 1964, China in 1965, India in 1966, Korea and Bulgaria in 1967, Japan and Vietnam in 1968, Thailand in 1969 and on the South American continent in Paraguay in 1975. It is now found in Romania, Greece, Czechoslovakia, Hungary and in fact over virtually all of the Eastern Europe and more recently in Western Germany and Africa. It seems that it will spread over the whole of the Eurasian land mass and Africa. As it is now established in South America there seems no reason why it may not spread to North America. It has even been suggested that eventually it may reach Australia.

The female mite is of a reddish-brown color about 1.4 mm long and 1.7 mm wide with four pairs of legs found under an oval shaped back. It is slightly smaller than a pin head (about the same size as a bee louse (*Braula Coece*)). The male mite is almost round, whitish in color, and smaller than the female (about 0.9 mm x 0.8 mm).

The mite is usually found attached or clinging to the adult bees between the body segments of the abdomen (often near the wax glands) or inside the capped brood cells. Mated females overwinter on the bees. As soon as the bees commence brood rearing in the spring the mites attack the larvae. The female mites begin their reproductive cycle by entering the cell of a 5-5½ day old larvae shortly before it is capped. Here she lays her eggs. She may lay up to 3 times with an average of 2 to 8 eggs per laying. Drone cells are preferred to worker cells and very seldom is the *Varroa* found in the queen cell. The adult mite either reemerges to lay more eggs in neighboring cells or allows herself to be capped with the brood.

The mites may feed on the larvae or immerse themselves in the brood food and receive nourishment immobilized with their ventral side (bottom) oriented toward the cell opening. Once the larvae consumes all the food the mites are freed and begin feeding on the larva/pupa. The immature bee will die if several mites are feeding upon it. At best it's victim will be deformed with missing wings or legs and underweight. As many as 21 adult mites have been reported in one cell.

Eggs are laid on the cell wall. After 48 hours male and female larvae develop, transforming themselves into protonymphs — changing again into deutonymphs and after feeding themselves for 1 to 2 days they develop into full grown mites. Development for adult females takes from 8-9 days and for males 6-7 days. Mating takes place within the cell and the male dies shortly afterwards. The fertile females attach themselves to the emerging bees. The life span of the adult female is estimated at 2 to 3 months in the summer and 6 to 8 months in the winter.

The maximum infestation of brood takes place in the spring. Infestation levels per colony may be from 3,000 to 11,000 or more mites. Since drone brood cells are preferred, the emergence of the drone brood causes the population of the Varroa to rise dramatically. Up to 5 mites can be seen on a single adult worker and 7 to 8 on a drone. Up to 12 mites can be seen on worker pupa and 20 on a drone pupa. The nurse bees are generally more heavily plagued than the field bees as they have more direct contact with the emerging brood. In late summer and early fall the Varroa population is at its peak and most are now attached to the field workers. In late fall and winter many die, with only a small number surviving attached to the clustering bees.

There still seems to be some lack of agreement as to the nutrition of the mites. However, the haemolymph (or blood) of the bees seems to be one of the main components of their diet. But other materials, e.g. hive debris, cocoon material, etc., also seem to provide some nutrition to the mites.

Bees spread the infestation by swarming, drifting, and robbing. But the prime spreader of the parasite is man himself. Man has spread the Varroa through the relocation and unification of colonies, through the exchange of brood frames, and through the importation and exportation of bees.

Varroa causes the death of pupae, or the emerging adult bees are not viable. There may be malformation of wings, legs, abdomen, or thorax. Drones show reduced sexuality and their numbers are reduced in the colony. The life span of queens is reduced and the workers may be smaller than normal. If bees are infested at 1 to 10 days old, their life span is reduced by half. Adult infested bees become agitated trying to dislodge the mites and die, frequently outside the hive. A colony with infested brood may show symptoms similar to European Foul Brood disease. The brood may be scattered, with dead larvae and pupae in various stages of decay. Cappings may show an irregular shape with white edges. The dead brood may have a putrid odour and may be readily removed from the cells. Larvae irritated by the mites may twist around in the cells (similar to EFB infected larvae) and may even twist themselves out of the cells onto the bottom of the hive.

The symptoms of infestation are very slow to appear with a lead time of 1 to 2 years, hence the extremely insidious nature of the disease. Three stages of infestation are recognized:

- Stage 1 Up to 0.5% of bees are infested. There are no obvious signs that a beekeeper would see. The colony must be destroyed and all bees examined to diagnose it at this stage.
- Stage 2 0.5% to 30% of bees infested. This may be up to 3 to 5 years from initial infestation. It is diagnosed at this stage by examination of 500 brood cells and adult bees. The colony would be visibly weak.
- Stage 3 Over 30% of bees are infested. Obvious symptoms would be present. Individual bees may carry 6 to 8 mites.

The prognosis depends upon a number of factors. No spontaneous cure of colonies has ever been observed. If the colony is infested with from 20 mites per 200 bees to 50 mites per 100 bees in autumn, the colony is considered doomed to inevitable destruction by the mite.

It is of prime importance that the disease is diagnosed as soon as possible to stop spreading in the apiary. In Europe the method used is — before the onset of winter, a sheet of strong white paper is placed over the bottom of the hive, and to prevent the bees carrying the dead mites out, a fine gauze screen with openings 3x3 mm is placed 5 mm above the white paper. In the Spring the paper is removed and sent to the laboratories.

Another method mentioned is — in the evening when all the bees are inside the hive, burn a fumigant in the hive, and close it for 1 hour. On reopening the Varroa will be found to have detached themselves from the hosts and can be seen on the white paper.

A third method is the washing of large samples of adult bees to remove mites and straining the wash water through coarse and fine strainers to remove rubbish but retain mites.

A further recommendation is to open the brood—especially that of the drones—and remove the larvae, the parasites being dark brown color show up sharply against the white of the larvae.

In the different countries where Varroa has become a problem, tests have been done with a great number of mite killers but up to now none has been 100% satisfactory and research is continuing unabatedly. Under present circumstances, when Varroa is detected the only thing to do is to kill all swarms and brood of the affected apiary.

The Varroa mite must be identified by microscopic examination. Beekeepers all over the world have confused Varroa and bee louse (B. Coeca). The diagnosis is complicated by many other species of mites which occur in the brood nest of honey bees. And in larvae Varroa infestation must be distinguished from EFB diseases.

The information on the Varroa mite was taken from

The Australian Bee Journal, Vol. 61, No. 10, Nove. 1980, pgs. 9 & 11.

Canadian Beekeeping, Vol. 8, No. 10, Summer 1980, p. 156.

"Mississippi Department of Agriculture & Commerce Beekeepers Newsletter" February 1983

South African Bee Journal, Vol. 52, No. 4, July/Aug. 1980, pgs. 17-19.

ACARAPIS WOODI

Isle of Wight disease, also called acarine disease or acariasis, is a serious apicultural problem in countries where it occurs. It is caused by tiny parasitic mites, *Acarapis woodi* (Rennie), living in and blocking the bees' main tubes or tracheae. It is now found in most of Europe, except Scandinavian countries, in Brazil, and most recently in Mexico 150 miles from the United States.

Acarine disease does not outright kill bees or colonies but can indirectly cause them to die from lack of vigor and decreased winterability. Spring dwindling could be a problem for those colonies that do survive the winter. The symptoms are similar to those of nosema disease and bee paralysis where affected bees may be found crawling on the ground and unable to fly.

The reproductive cycle differs from that of varroa mites in that only adult bees are affected. Mated females leave the trachea and transfer themselves to other bees upon contact, preferably young bees less than 9 days old. Once bees are 9 days old, their spiracles (openings into the tracheae) remain closed and the mites can't get inside. Five to seven eggs are laid once the female enters and in about two weeks a mature mite results.

The acarine mite, unlike varroa mites, are very small and a microscope is needed to observe them. However, a visual darkening of the tracheae as seen with the naked eye is a means of determining if a colony is infested. However, with light infestation levels a microscope is necessary. All stages of the mite (egg, larva, nymph, and adult) are found in the tracheae. They must live on the host; for without it they would die within a few hours.

To date, there is no known treatment to rid colonies of acarine mites without killing the bees. Cold temperatures do not kill or inhibit mites. We suspect the mites could survive in northern US and Canada, if introduced.

The above information was taken from -

- 1) Mississippi Department of Agriculture & Commerce Beekeepers Newsletter, February 1983
- 2) "The First Quarantine Interception Of Isle of Wight Disease in New South Wales" by E. Schicha and B. London in the Aug. 1980 issue of The Australasian Beekeeper.
- 3) "Acarine Disease Near USA Borders" in a past issue of the Minnesota Beekeepers newsletter.

## SERIOUS CONSEQUENCES OF THE VARROA AND ACARINE MITES

The following is taken from the February 1983 issue of the Mississippi Department of Agriculture & Commerce Beekeepers newsletter.

The average beekeeper might not see the serious consequences of the introduction of the Varroa and Acarine mites into the U.S. Let's look at some of them in detail!

1) Package and queen production — The life blood of beekeeping in the South would possibly be lost! One infestation in a Southern state could mean a ban on all bees and queens shipped from that state. These mites are spread by the movement of bees. Northern beekeepers would be very skeptical about buying packages and queens from the south if infestations were known to occur, even if health certificates were issued. Could they rear their own queens and make splits to compensate for expected winter losses rather than chance buying mite infested bees. And still yet, what will they do about breeding stock? What might happen to our major bee breeding programs? Of major concern is the fact that the varroa mite prefers drone brood. Beekeepers who rear their own queens would have to maintain mite-free drone colonies to insure a mating population. Commercial queen breeders would automatically be quarantined once an infestation is discovered.

2) Migratory beekeeping — Just think of how many beekeepers depend on moving colonies from one location to another for a honey crop? It might be to Mississippi to overwinter and make divides. It might be to Florida for the citrus flow, then to Georgia for gallberry, and finally northward to home for the clover and alfalfa. How will these practices which affect their operation and livelihood be altered? The more we move the greater the chance that our bees will come in contact with mite infested bees. On the other hand, if our bees become infested, our movements will be greatly curtailed, either by choice or state regulations.

3) Honey production — It's true that other countries have and are learning to live with these mites. Some of them remain leading exporters of honey. Consequently, it's hard for us to understand and estimate how devastating these mites have been and will be to us.

With the devastation of Varroa one can see how honey production might directly be halted and indirectly affected by its detriment to the commercial package and queen production and migratory beekeeping. Those colonies that are not killed would suffer varying degrees and overall loss in production could average quite high with improper management, prevention, and control.

The literature from other countries reports that in 3-5 years 20-30% of the bees may be infested with Varroa yet productivity remains high for a long time. Untreated colonies normally die within 3-5 years. Reports from Russia indicate that about 3% (200,000 colonies) of its colonies are lost each year. In the Phillipines the beekeeping industry consisting of about 1,000 colonies was eliminated by Varroa in 12-15 years. It has since been restored.

A beekeeper would have to find some way to effectively and routinely survey his operation for Varroa mites and destroy infested colonies. Additional increases or splits would have to be made to compensate for expected losses each year.

4) Pollen production— Pollen production, of course would be less in infested colonies and trapped pollen could contain active mites when collected. Consequently, any pollen to be fed back to bees should be treated by some means, such as frozen for a period of time. It is not known how long Varroa mites can live away from a host or if they can get nourishment from pollen.

5) Regulatory programs — A major change would occur within state regulatory programs. To protect the well being of the industry those states not initially infested would need to hire additional inspectors and lab technicians because inspections for mites would definitely require closer and more thorough inspections and the collection of adult bees for laboratory examination. Package and queen producers would require a very thorough inspection as would migratory beekeepers. Such inspections could not be made overnight and within a few days as has been done. Cooperation and timing of inspections between the beekeeper and inspector would have to allow days or even weeks for the inspection before shipping or moving the bees.

Considerable time, labor and expense would be involved in the control and eradication of infestations once discovered. Enforcement and surveillance would have to be increased to catch offenders.

To come up with a dollar value of the impact of the introduction of either of these mites into the U.S. would be almost impossible. But the expense would be great.

## MISSOURI STATE BEEKEEPERS SPRING MEETING

University of Missouri

Memorial Union

SATURDAY, MARCH 21, 1987

A.M.

- 8:30-9:00 Registration
- 9:00-9:05 Meeting called to order
- 9:05-9:10 Invocation
- 9:10-9:20 Welcome and Introduction
- 9:20-10:15 Current Status - Chemical Control of  
Tracheal Mites

Dr. Joseph D. Moffett  
Research Entomologist  
USDA ARS Honey Bee Lab  
Weslaco, Texas

10:15-10:45 Break

10:45-11:00 Beekeeping Programs for Youth

Dr. Flerney G. Jones  
Extension Entomologist  
University of Missouri

11:00-11:45 Importance of Pollination for Fruit  
Crops

Dr. James W. Johnson  
Extension Entomologist  
University of Missouri

11:45-1:15 Lunch (on your own time to visit &  
talk bees)

P.M.

1:15-2:15 Beekeeping in the United States

Dr. Joseph D. Moffett

2:15-3:00 To be announced

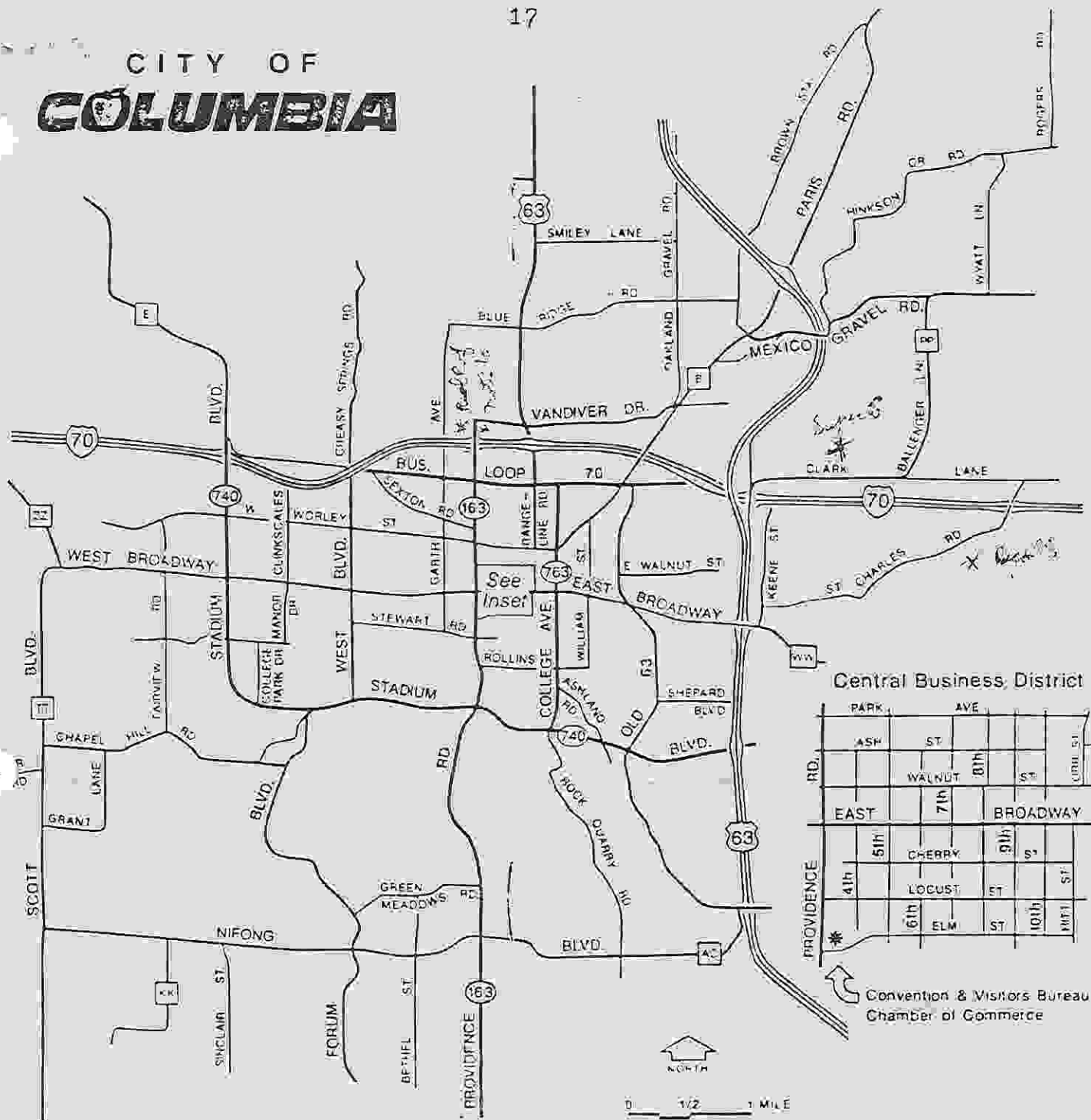
3:00-3:30 Business session

3:30- ? Attendance prizes &amp; adjournment

All are invited to attend the Executive Board Meeting at 7:00 p.m. on Friday, March 20, 1987, at the Boone County Extension Center 1408 I-70 Drive SW, approximately 3 blocks West of Howard Johnson's Motor Lodge.

(NOTE) Beekeepers planning to stay overnight are urged to make reservations early because of March 20, 21, 22, is the State Basketball Tournament. No motel has given special rates, however, members will probably find Red Roof Inn and Motel 6 to be the most convenient.

# CITY OF COLUMBIA



## MOTEL 6

1718 NORTH PROVIDENCE ROAD

442-3155

SINGLE

\$18.75

1 BED

2 PEOPLE

\$23.95

2 BEDS

2 PEOPLE

\$23.95

2 BEDS

3 PEOPLE

\$27.95

2 BEDS

4 PEOPLE

\$31.95

## REGAL 8 INN

1800 I-70 DRIVE SW

445-8433

22.88

27.88

32.88

32.88

32.88

1-800-851-8888

## SUPER 8

3216 CLARK LANE

474-8488

24.88

29.88

31.88

33.88

35.88

## RED ROOF INN

201 EAST TEXAS AVENUE

442-0145

25.95

30.95

32.95

34.95

34.95

1-800-848-7878

I-70 EAST OF COLUMBIA

Leave I-70 and turn into the business loop 70. Turn left at Tandy Avenue and follow this road south to the second set of stop lights. Turn right on Rollins Street and proceed to the stop sign at Hitt Street. Turn right and park in the Visitors lot  $\frac{1}{2}$  block up Hitt. The Agriculture Building is across the street and the Memorial Union is 1 block North.

I-70 WEST OF COLUMBIA

Leave I-70 and turn onto #740 Bi-Pass. Follow #740 approximately 5 miles to the junction of Providence Road. The football stadium will be ahead and on your right. At Providence Road, turn left and go approximately 2 blocks to Rollins Street. Turn right on Rollins and follow it to Hitt Street. Turn left and park in the Visitors lot  $\frac{1}{2}$  block up Hitt Street. The Agriculture Building is across the street and the Memorial Union is 1 block North.

FROM #63 SOUTH

Turn left onto Stadium Road and proceed to College Avenue. Turn right on College to the first stop light. Turn left on Rollins Street and follow it to Hitt Street. Turn right on Hitt Street. Park in the Visitors lot  $\frac{1}{2}$  block up Hitt Street. The Agriculture Building is across the street and the Memorial Union is 1 block North.

MISSOURI STATE BEEKEEPERS ASSN.  
619 Mendelssohn Drive  
Kirkwood, Missouri 63122

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