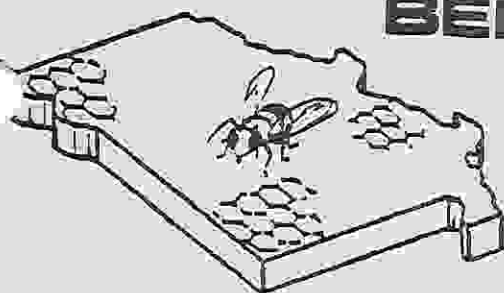


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NUMBER 1

DEAR BEEKEEPING FRIENDS,

The Annual Spring State Meeting will be held on Saturday, March 22, 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 four speakers:

Mr. Joe Graham, who is the editor of the American Bee Journal, will address the topic of "Honey Marketing and Promotion and Current Status of Federal Programs".

Mr. Joe Francka, our State Entomologist, will give "An Update on Mites and Africanized Bees".

Mr. Ray Nabors, an area entomology specialist from Portageville, will speak on "Comb Honey Production System".

Mr. Francis Scheidegger, a hobbyist beekeeper, will present "What Beekeepers Don't Know About Bee Pollen and Bee Propolis".

The complete agenda for the program is found on page 15 of this newsletter.

The Executive Board meeting will be held on Friday evening, March 21, at 7:30 pm at the Boone County Extension Center, 1408 I-70 Drive SW — approximately 3 blocks west of the Howard Johnson Motor Lodge. All beekeepers are invited to attend this meeting.

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

Since the motels are unwilling to give special group rates, no particular motel has been chosen. On the following page are some suggestions with rates as of January 1986 given.

NOTICE: The State High School Basketball Tournament is in progress. Some motels are already sold out. Get your room reservations immediately.

HOWARD JOHNSON MOTOR LODGE
Business Loop 70 West
(314) 442-1191
\$40.00 + tax (double occupancy)
Free Breakfast

RED ROOF INN
201 East Texas Avenue
(314) 442-0145
\$30.95 + tax (double occup.)

MOTEL 6
1718 North Providence Road
(314) 442-3155
\$21.00 + tax (double occupancy)

BEST WESTERN COLUMBIA INN
I-70 and 63 South
(314) 474-6161

HOLIDAY INN - EAST
Providence Road and I-70
(314) 449-2491

HOLIDAY INN - WEST
Stadium Road and I-70
(314) 445-8511

* * * * *

MISSOURI'S HONEY COOKBOOK

The Missouri State Beekeepers' Honey Cookbook is hot off the press!!

The cookbook contains 422 of your favorite honey recipes. The categories range from Soups, Salads, Dressings, Sauces to Main Dishes to Vegetables to Bread, Rolls, Pies, Pastry to Cakes, Cookies, Icings to Beverages and Miscellaneous. The last 30 pages of the 214-page cookbook contain Basic Kitchen Information - such as, an Everyday Herb Guide, a Time Table for Meat Cookery, 6 Steps to the Perfect Pie, Freezing Prepared Foods, etc. etc.

The editor of this cookbook Mrs. Jean Tohtz worked long and hard to assemble and categorize and type these recipes. And not only did she do this once but twice!! The post office or the printing office lost the first edition which she sent. So she had to begin again!! VERY SPECIAL THANKS TO YOU, JEAN!! You certainly deserve much, much more for all your hard work time, patience, and endurance on this project.

As Jean states in her forward to this cookbook:

"Around thirty years ago, beekeepers in Missouri formed what is now the State Beekeepers Association. The purpose was to

promote beekeeping in our state and to produce a fine agricultural product - honey.

Since the beginning with less than twenty members, our Association has grown to almost seven hundred members. Missouri ranks eleventh in the nation in honey production. Crop pollination for the farmers provided by the honey bee cannot be measured, but if the pollination were lost, there would surely be a reduction in the food crops for our tables.

Missouri beekeepers and their families have enjoyed cooking with honey. We have compiled this cookbook containing favorite recipes by our members.

We hope you will enjoy cooking and eating with Missouri honey recipes that our members have shared for this cookbook."

Mrs. Jean M. Tohtz
Cookbook Editor

The cookbook will be on sale at the Spring State Meeting to members for \$3.60. At the time of this printing of the newsletter the price for non-members has not been set. But it will be by the Spring Meeting, March 22.

Some local associations also have copies of the cookbook for sale. If your local association does not have some copies and would like some, please write to the State President Mr. Curt Dennis at 2415 Johnstown, Florissant 63033 specifying the number needed.

* * * * *

DUES DUES DUES DUES

Your 1986 dues are now payable. Deadline is May 1.

If you are 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 complete address and zip code to the State Treasurer Mr. Truman Hardin.

If you do not belong to a local association, your dues are \$4.00 and are to be sent directly to Mr. Truman Hardin, Treasurer, 1829 W. Washita, Springfield, Mo. 65807. Make your check payable to Missouri State Beekeepers.

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

* * * * *

Within the past weeks several articles have come across my desk which are pertinent to three of our scheduled Spring Meeting speakers' presentations.

Part of the presentation of Mr. Joe Graham, the editor of the American Bee Journal, will concern the "Current Status of Federal Programs". In the President's Message of the Winter 1985-86 Michigan State Beekeepers' Association Newsletter, Mr. Ray Buell states

"... the honey loan program remains in effect for the 1986 crop in much the same manner as it was in 1985 except that producers will now be encouraged to sell to domestic packers at prevailing prices with the government making up the difference with a subsidy payment. The support price could not go down more than 5% per year to a minimum of 54 cents. This type of program should encourage honey packers to use domestically produced honey instead of relying on imports. At the same time this should cut the cost of the honey price support program by 60 to 70% without causing the American Beekeeper to lose his or her shirt. By that time perhaps we will have a honey promotion bill in force that will increase the demand for honey and keep the price from going down to disastrous levels. World honey prices have been moving up in the last 2 months partly due to weakening of the U.S. dollar and partly to tighter supplies of honey from exporting countries."

Mr. Graham can provide us with further information concerning the Federal programs and also the future of honey marketing and promotion.

Mr. Joe Francka, our State Entomologist, is scheduled to give an update on mites and the Africanized bees. Also in the President's Message of the Winter 1985-86 Michigan State Beekeepers' Association Newsletter, Mr. Buell reports

"Another bright spot on the horizon is that several states have asked the Interregional Research Project #4 for permission to use pesticides for the control of Trachial mites in honeybees. According to New Mexico University, New Hampshire and South Dakota want to use bromopropylate. Texas has asked to use Chlorobenzalate and Florida would like Dienochlor and Amitraz. All of these are acaricides or acaricide insecticides with fairly low toxicity to honey bees and humans.

"With Tracheal mites having been found in at least 17 states it would seem to me to be better to find a method of control the severity of the infestation rather than killing the patient. If the mite is indeed so serious a threat that infested bees must be killed, then the beekeepers should be fairly compensated by the government (State or Federal) agency that makes that determination."

"Also worth noting is that when the California Department of Food and Agriculture closed the Africanized bee project headquarters in California. They said the introduction of Africanized bees in California had been neutralized through elimination of known Africanized colonies and by genetic mixing with native European bees. That, my friends, is something most experts said could not or would not happen."

For Mr. Francka we will have questions on the status of mites in Missouri and the proposals or steps taken to prevent or control infestations. Also what kind of a threat do the Africanized bees pose for beekeeping in general and in Missouri in particular? Have the Africanized bees in California been neutralized through elimination and genetic mixing?

The use of bee pollen for human beings for health or curative purposes has long been a subject of speculation and controversy. Mr. Francis Scheidegger, a member of the Association and a hobbyist beekeeper, will present a program on "What Beekeepers Don't Know About Bee Pollen and Bee Propolis". In November 1985 the Webster-Kirkwood Times, a local newspaper, did a feature on Mr. Scheidegger entitled "Bee Pollen Each Day, Keeps Doctors Away". The following excerpts have been taken from that article.

According to Scheidegger, bee pollen has been around since Biblical times and is said to have been on the menus of Samson, John the Baptist, Hippocrates and Virgil. Neanderthal Man probably dined on it regularly.

"Omni Food," as Scheidegger describes bee pollen, is a total food. Scheidegger collects this omni food from bee pollen traps he attaches to his bee hives on the outskirts of Kirkwood.

Jim Devlin, a friend of Scheidegger's and founder of Mr. Bee Pollen Products based in Arizona, was in St. Louis recently to speak at a seminar buzzing with

bee enthusiasts. Devlin has been espousing the virtues of consuming pollen for 20 years and attributes his good health to a daily dose. Scheidegger has been using pollen for a month now and reports that he wakes up easier in the morning and has more energy.

According to Devlin, scientific testing around the world has confirmed his claims on the powers of bee pollen. Devlin also points to testimonials by members of the Dallas Cowboy and Notre Dame football teams, and by Queen Elizabeth and Ronald and Nancy Reagan.

"If you are using a high-level, good food like bee pollen, it is going to affect you," said Devlin. "It's going to affect your hair, your eyesight, hearing and your ticker."

Scheidegger said during his many years of beekeeping he has reached into the pollen collector often to gather the natural pollen. Golden-yellow colored nuggets that look much like kernels of corn are squeezed off the rear legs of the bees as they pass through a screen to the hive.

The chemical analysis of bee pollen reads like a "Who's Who" list of nutrients and vitamins. Calcium, iron, vitamins B1 and C, potassium and zinc are just a sampling of the contents of bee pollen. Pollen also contains lecithin, a substance often used in weight control products. Jim Devlin says that at 57 years old, a daily intake of pollen has helped him lose weight and maintain his slim figure.

By the time of the Spring State Meeting, Mr. Scheidegger will have been taking a measured amount of pollen tablets for about five months. He can give us an update on his personal experience with bee pollen and its promotion.

As stated the use of bee pollen for nutrition and health in humans is a controversial subject. The following article appeared in the July 1985 issue of The Physician and Sports Medicine, the Nutrition and Fitness section.

The author Dr. Gabe Mirkin is an associate clinical professor of pediatrics at Georgetown University School of Medicine in Washington D.C. Ralph A. Nelson, MD, PhD, editor of Nutrition and Fitness, is director of research and professor of nutrition at the Carle Foundation in Urbana, Illinois.

Gabe Mirkin, MD

Bee Pollen: Living Up to its Hype?

Bee pollen is very big business. Sales by one company in Sweden totaled more than \$2.5 million last year.¹ That company manufactured more than 140 million pollen tablets from a harvest of 20 tons of pollen.

But just what is this big-selling product? Like any food, pollen must be enzymatically degraded into carbohydrates, fats, and proteins. It contains approximately 55% carbohydrates, 1% to 20% fat, and 6% to 30% protein.² Before pollen's nu-

trients can be delivered to the bloodstream, carbohydrates must be degraded into simple sugars, proteins into individual amino acids and chains of amino acids, and fats into fatty acids, monoglycerides, and glycerol.

Claims

Even though pollen follows a biological script like any other food, it continues to have dedicated followers who make all sorts of claims. Unfortunately, many people take advantage of freedom of speech and

press in this country, and they use their freedom in unethical ways. Lay publications often print unsubstantiated claims about foods and supplements, including bee pollen.³

For example, it has been reported that pollen improves athletic and sexual performance; prevents infection, allergy, and cancer; prolongs life; and improves digestion. Also, pollen supposedly promotes weight gain, weight loss, and weight maintenance.

Despite these claims, a computer

continued

search of the medical literature reveals that only one article has been written about the effects of bee pollen on athletic performance. Results from that article show that bee pollen does not improve athletic performance.⁴

Furthermore, no evidence exists to support the often repeated claim that runners improve performance when they take pollen. All products need to be tested in controlled studies to show that they improve performance, and pollen has never met this criterion.

Yet pollen promoters continue to mail out torrents of unpublished manuscripts and lay articles that make unsubstantiated claims about their money-making product. Remi Korchemny, a former track coach at Pratt Institute in New York City, has stated that recuperation of adenosine triphosphate (ATP) occurred faster with athletes taking bee pollen.

Korchemny first made his claim in an unpublished manuscript that includes the following: "Bee pollen contributes to faster recovery time by reducing lactic acid in the blood." Korchemny reached his conclusion after testing pollen on athletes for three years. He may be correct, but he has not proved his claim to the scientific and medical communities because he has not published his studies in a scientific journal. Furthermore, his unpublished manuscript describes no tests for measuring ATP or lactic acid.

Another unpublished manuscript from Poland claims that taking a pollen extract with hydrolyzed protein helped military drivers acclimatize to a tropical climate. However, the study did not rule out a placebo effect. The study also lacked peer review.

Pollen Collection

Besides the bickering among pollen promoters and skeptics, there is also an ongoing controversy among pollen producers about the best way to collect pollen. For years, most pol-

len sold in the United States for human consumption was collected on the bodies of bees after they had flown from flower to flower and returned to the hive. A wire screen placed near the hive entrance brushed the pollen from the bees. The pollen fell into collection bags beneath the hives.

But marketers of machine-collected pollen claim that pollen carried by bees is contaminated. They say it causes allergies after a short period of use, because the contents include fungi, bacteria, mites, insect eggs, parts of insects including wings and hair from bees, and other animal particles.

However, proponents of bee-collected pollen have different beliefs. They say that bees produce a very fast-acting substance in their bodies that sterilizes the pollen they gather and that by the time the bees reach the hive, the pollen is incapable of germinating and fertilizing.

As far as I know, no pollen-sterilizing chemical produced by bees has been described in the scientific literature. In fact, pollen is rapidly colonized by bacteria and fungi when it is exposed to air.

Advocates of bee-collected pollen also claim that their product is superior because bees choose pollen only from the flowering plants that have greater biological value. They say that machines collect unwanted pollen from wind-pollinated plants,

such as pine, alder, rye, maize, timothy, and cocksfoot.⁵ However, there is no scientific evidence that pollen from flowering plants is a better food or has more health-giving properties than pollen from wind-pollinated plants.

Safety

Some promoters also make unsubstantiated claims about safety. It has been said that some pollen may cause allergies, but not pollen collected by bees. Also, some have even written that bee-gathered pollen may safely be taken by everyone; nobody will suffer ill effects from the pollen.

But facts prove otherwise. People who are allergic to specific pollens have developed asthma, urticaria, rhinitis, and anaphylactic shock after ingesting that pollen.^{6,7} Five to seven percent of US citizens are allergic to ragweed pollen, and they may develop conjunctivitis and rhinitis each fall when ragweed pollen fills the air. In addition, when people who are allergic to ragweed take bee pollen collected from dandelions, sunflowers, or chrysanthemums, they can develop allergic symptoms.

Finally, only one company in Sweden has produced research data to show that their pollen extract is low in allergenic properties and relatively free of contamination. Unfortunately, their data remains unpublished too.

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MISSOURI BEEKEEPING TIME CAPSULE

The Disease
by
Mike Roling

The clues to this riddle are: AFB, 1907, LH, LFC, and my desk.

The initials, AFB, look innocent enough, but to seasoned beekeepers they represented lost revenue, additional hours of toil and even today, colonies of bees subjected to the torch. This unseen adversary, American foulbrood, was probably the single most important hindrance to beekeeping in the late 1800's and first half of the 1900's. Numerous suggestions for its prevention and cure were introduced during this period. However, most were of little avail, very temporary, or practical failures. Like many situations, when "wolf" is cried too often, the cries are less and less effective. So it was with the treatments for AFB. Beekeepers became the most severe critics of new techniques for control of AFB.

The year 1907 represented a precedent in Missouri. It marked the year the first laws concerning bee inspectors were instituted. Some people familiar with the "Show-Me State" may be surprised because many are under the impression that not until the late 1970's did we have laws promulgated regarding beekeeping. But 1907 was the beginning of this state's battle against the dreaded bacteria. This law plainly stated that one of the primary objectives was "... prevention and suppression of contagious or infectious diseases of honeybees, such as foulbrood". In addition, it gave the inspector explicit power that he "... may burn or otherwise destroy such diseased bees, comb, or other material that might cause the spread of the infection". Besides destruction of diseased hives, neglect or antagonistic behavior to the enforcement of this law could result in a fine of "... not less than ten nor more than twenty-five dollars for each offense". Missouri continued to have laws concerning beekeeping until the early 1930's. Laws during this time period were amended frequently, but all had one goal in common: control of American Foulbrood.

Thirty-four years after the state of Missouri began to attempt control of AFB, the single most practical solution up to that time was introduced by LH and LFC, Leonard Haseman and L.F. Childers. Haseman was no novice to this task. He worked on its solution for nearly thirty years before the 1944 publication, "Controlling American Foulbrood with Sulfa Drugs". The equally important partner in this work was L. F. Childers. It was Childers, a retired

faculty member of the University of Missouri and owner of a commercial apiary in Rocheport, who first suggested to Haseman the possible use of sulfa. You might expect that with this publication there would be sighs of relief, words of congratulations. Both men were trained in the sciences and had "put their time in." They were solid citizens of the scientific world, but their work was not viewed in light of their backgrounds.

The journals in the late 40's were packed with reports concerning treatment with sulfa drugs. Hearing of the above report by Haseman and Childers, many raced to the field and filed reports based on the results of one season. Hardly what could be considered good scientific investigation.

In many instances the critics were in authoritative positions. Their opinions drastically affected the controversy. In some cases, it wasn't until one authority baptised the new treatment as okay that another authority would also give it a positive nod. An example of this process can be illustrated with the following quote: "To be personal, it took me a long time to come to the decision that sulfa had something; . . . I realized that when a man I respected as much as Mr. Cale would go "all out" for the "drug" . . . I should at least get into a more open frame of mind"

Many in the inspection business supported the status quo: burning had been good for the beekeeping industry in the past and should be good in the future. The idea of a drug treatment was far too whimsical and unsafe in the hands of amateurs. There had to be a magic bullet for the cure or the torch -- there was no room for the intermediate methods.

Both Haseman and Childers took occasion to answer their critics. In 1949, Haseman seemed to indicate his weariness on the whole debate when he introduced an article with this comment: ". . . for this one time I am breaking my New Year's resolution to cease arguing with or trying to convince anyone, be he beekeeper or beekeeper official, that the sulfa treatment properly used will effect a complete cure of AFB in any apiary or in any beekeeping region". Unlike many of his critics, Haseman never saw the sulfa drug treatment, or for that matter, any treatment as the end all of AFB. He viewed the struggle against AFB on a number of different levels. He hoped the day would arrive when AFB did not exist, but felt the best anyone could do was to create an environment as safe as possible with the current knowledge. Just because sulfa had elicited a positive response, it was no reason to abandon resistant stock or sanitation. The very opposite was true. By the use of

all available tools a respectable defense could be waged against the disease. His philosophy was much like our current concept of pest management. Pest management relies on our ability to keep a pest at a low enough level to produce the desired crop; knowing that in most cases eradication is too costly, difficult, or impossible. In Haseman's words: "Live with foulbrood, tuberculosis, scale insects, horse bots, sparrows, and many other annoying or dangerous creatures of nature? Why certainly; for biologically we have no other choice in the matter." Childers presented similar defenses of the treatment, trying to temper arguments with some common sense; trying to point out where specific treatments reported in the journals went astray. Colonies with long histories of infection represented the real problem. These needed special treatment. And yes, there may not be a way to save old comb that harbored diseased pollen and honey. His most succinct recommendation on this subject was a closing paragraph in 1947: "My advice still is to clean out the hive, using sulfa the while, change your queen, and if you are afraid, put in a resistant one--then close up the hive and go fishing."

The entire sulfa treatment picture was just a hunch. Two men with qualified training followed this hunch, just one of many over the years. It worked. They published; they weathered the storms. By the 1950's it was generally recognized as a significant agent easing the grip that AFB had on the industry. In addition, it opened a whole new line of thought. If this drug worked, why not try others? Ultimately, workers showed other drugs to be effective against bee diseases and our industry is better for those advances.

My desk? No, it hasn't slipped my mind. Dr. Leonard Haseman's memory lives on at the University of Missouri. Each year graduate students at that institution are eligible for the Leonard Haseman award. I was one of those fortunate recipients. Receiving the financial award was fine, but I wanted to do something with that award that would make a lasting reminder. This desk I am working on was my choice. Dr. Haseman's achievements live on for me; his work lives on for the benefit of many beekeepers, unbeknownst to them.

EDITOR'S NOTE: Over the past two years Mike Roling has informed and entertained us with his articles in the MISSOURI BEEKEEPING TIME CAPSULE. If you wish more of the same, read the January 1986 issue of the Missouri Conservationist in which appears Mike's article "Bee Trees and Covered Wagons".

BEEKEEPING QUESTIONS AND ANSWERS

What is honey-dew honey?

"Honey-dew honey is produced not from floral nectar but from the sweet liquid excreted by plant-lice (Aphididae), jumping plant-lice (Psyllidae) and bark-lice or scale-insects (Coccidae). These insects feed on plant juices and their excretions fall on the foliage of trees like dew, hence the term "honey dew".

"Honey dew was known in ancient times and Pliny thought it fell from the stars, which belief was held for many centuries. Chemical analyses have shown that honey dew differs greatly from nectar: whereas floral nectar consists almost entirely of sugars, honey dew contains about 70 per cent nitrogenic substances and dextrin. Honey-dew honey is usually dark, viscous, with a faint aroma and an inferior flavor. Experiments have shown that, unlike floral honey, honey-dew honey possesses weak bactericidal properties.

"Honey-Dew honey kills bees if it is left as winter food. . . . this harmful effect is due to the high mineral-salt content in honey-dew honey."

(The above information was taken from Curative Properties of Honey and Bee Venom by N. Yoirish, New Glide Publications, 1977, p. 43.)

Does a brood equalization program work?

"About 8½ weeks prior to when you expect the main honey flow to really be under way, you equalize brood of each colony leaving only four combs of brood and bees for each. Along with those frames of brood we assume there will be about 3 pounds of adult bees. That total is 10,500 bees. The frames of brood will contain about 16,800 cells of brood of all stages. About that time, under normal conditions and a good population of bees, we can have a queen laying about 2,000 eggs per day. The 60 days at 2,000 eggs per day totals 120,000 bees to be hatched during that 8½ weeks. Not many colonies ever reach a population of 100,000 no matter what you do. Let's assume that half of the 120,000 bees are lost due to old age during that time, so we still have 60,000 adult bees left in the hives. Any time there is 60,000 bees in the hive at the beginning of the main nectar flow they will gather whatever potential there is out there and produce a crop of honey."

(Taken from The Buzz published by the Iowa Honey Producers Association.)

"Starving bees in a field of clover and fireweed in full bloom makes one think. Because clover, especially dutch, blooms here from spring until fall, the question remains 'when does it and when doesn't it?'"

"Fireweed: Temperature must be 89 to 90 degrees with the humidity of less than 50% according to L. B. Alexander of Oregon by way of Honey Plants, revised by Larry Goltz, Editor of Gleanings.

"Red Clover: It yields nectar to the honey bee only when treated as 'double-cut', that is when a crop is harvested as silage before the plant flowers to obtain a seed harvest. When the second cut is in full bloom, the day temperature of at least 70 to 73 degrees F is required for about three days to provide heavy nectar secretions. Nectar builds up in corolla of the flowers, which is shorter than the corolla of a single cut clover, until it can be reached by the honeybee's tongue. When this happens the bee is able to empty the whole flower and a very heavy nectar flow occurs. This is in The Illustrated Encyclopedia of Beekeeping by Roger Morris and Ted Hooper."

(The above question and the researched answer is the work of Jean Gravel of Ontario, Canada. It appeared in the December 1985 issue of the Alaskan Beekeepers newsletter, The Cook Inlet Beekeepers Association.)

A frequent question is how to tell when there is a flow on?

"By far the easiest and surest way is to use a scale or hive monitor to watch the hive gain (or lose) weight. An old platform scale is ideal. Place the hive bottom directly on it and track the gain each day; a gain over a few days is a sure indicator. Those of us not fortunate enough to have a scale must rely on our judgement, a hive monitor or similar device sold by most bee supply houses. . . .

The bees themselves provide clues indicating a flow is in progress. Rapid flights to and from the hive with no waiting on the landing board is a good indicator, as is a large number of bees fanning. In the evening a low rumbling sound heard when the ear is placed next to a honey super is usually a sign that the bees are processing the nectar brought in that day. A stethoscope amplifies the sound nicely . . . Oh how beautiful it is!!"

(The above question and answer is taken from an article "Bee Talk" by Charles W. McKellar.)

In which nutritional values do ordinary sugar and honey differ?

"According to the U.S. Department of Agriculture's food composition tables, a pound of granulated white sugar (cane or beet) contains nothing but carbohydrates and calories. Everything else is removed in processing, all protein, minerals and vitamins present in the raw material. One pound is left containing 471.7 total carbohydrate and 1,748 calories. Extracted or strained honey contains some amount of all major nutrients except Vitamin A. Included in one pound of honey are: 1.4 grams of protein, 23 milligrams of calcium, 73 milligrams of phosphorous, 4.1 grams of iron, 0.2 milligrams of thiamine, 0.17 milligrams of riboflavin, 1 milligram of niacin, 16 milligrams of Vitamin C (ascorbic acid), 360.9 total carbohydrates, and 1,333 calories." (From the Nov. 1985 issue of Richmond Beekeepers Association's Canada Newsletter.)

During the process of getting honey ready for the State Fair competition last year I noticed foam in all my entries. This was only detectable with the use of the polariscope. The foam was very, very fine and seemed to be in a colloidal suspension. Could you explain what causes this, and what the beekeeper could do to avoid it?

"Most of the foam in extracted honey comes during the extracting and straining process. You will have more foam if the honey is cool when it is extracted. Supers should be stored in a hot room with the temperature about 110 degrees. This will do several things. One, the honey will extract and strain faster. Two, the moisture content will be lower in the final product.

"Foam is added every time the honey passes through air. Straining it and filling containers involves dropping it from a height which contributes to the problem. You should set up a straining process to minimize the height the honey falls. One suggestion is the use of panty hose so the bottom of the hose is just above the honey in the bottling tank. The panty hose will be better for straining than any type of cotton product which would add lint. The extra surface of the panty hose will speed up the straining process. Be sure to wash and rinse the panty hose.

"After straining it through nylon into a honey tank, the honey should set for 24 or more hours before bottling. The honey should be heated keeping the temperature between 110 and 120 degrees to let the foam rise to the surface of the tank. A heat tape can be purchased from your local hardware store. After settling the foam can then be skimmed off and the honey bottled."

(Written by Robert E. Gibson, Editor of "The Bee News")

What is a good way to store your electric uncapping knife?

"When uncapping is finished turn the electricity off. Rub all honey and wax off with a hot, damp cloth. After drying, turn on the electricity to heat again. Rub beeswax over the knife while it is still hot. Let cool and wrap in paper and store until next season."

(From the January 1986 edition of "The Bee News".)

Why do wild honeybee colonies survive without bee drugs?

"In considering the survival of honeybees, we should remember escaping swarms in the American colonies made their way south along the coastline of North America and "white Man's flies" were found established in cedar trees in the Fraser Valley before the arrival of the first white settlers.

"Steve Taber, a bee breeder in California, in one of his numerous publications has stated he can breed disease resistant honeybees by simply breeding bees which are good at housekeeping; bees which keep the comb clean help prevent the spread of foul-brood.

"It is suggested there is one additional major factor which helps in the survival of wild colonies: wild honeybees are not handicapped by a man-made bottom board where infected debris can collect and reinfect a colony. Not having a bottom board, in a wild colony, the infected debris falls down away from the brood nest, helping the bees to control and remove the foul brood infection.

"Brother Adam, a world famous bee breeder at Buckfast Abbey in England, never uses bee drugs to control foul brood. Instead he practices sanitation. Everyfour years bees wax is cut out of the frames and the frames, supers, hive tops and bottoms are boiled in lye and then repainted. The bottom boards in his colonies are kept immaculately clean.

"It is the unsanitary beekeeper with little understanding of disease who must rely solely on bee drugs to control disease. However, do not take any chances. Your bees may not be good housekeepers. Use bee drugs as prescribed by the provincial apiarist.

"Periodically, thoroughly wash the bottom boards of your colonies. If you cannot boil them in lye, use a propane torch to kill the foul brood spores, especially applying the blow torch flame to the edges of the bottom board. Supers can be given the same treatment, as well as tops and bottoms."

(Taken from an article by Allan King "Why Do Wild Honeybee Colonies Survive Without Bee Drugs?" in the Canadian Beekeeper and reprinted in the Alaskan Beekeepers' Newsletter.)

MISSOURI STATE BEEKEEPERS ASSOCIATION

Annual Spring Meeting
 Saturday, March 22, 1986
 University of Missouri-Columbia
 Memorial Union Auditorium

- 8:30 - 9:00 a.m. Registration (free)
- 9:00 - 9:05 a.m. Meeting called to order by President
- 9:05 - 9:15 a.m. Welcome and Recognition of Officers and
 Local Associations
- 9:15 - 9:20 a.m. Invocation
- 9:20 - 10:00 a.m. What Beekeepers Don't Know About Bee Pollen
 and Bee Propolis -- Mr. Francis Scheidegger
- 10:00 - 10:30 a.m. Coffee Break
- 10:30 - 11:30 a.m. Honey Marketing and Promotion and Current
 Status of Federal Programs --
 Mr. Joe Graham, Editor of the American Bee
 Journal
- 11:30 - 12:00 p.m. Update on Mites and Africanized Bees --
 Mr. Joe Francks, State Entomologist
- 12:00 - 1:30 p.m. Lunch (on your own)
- 1:30 - 2:30 p.m. Comb Honey Production System --
 Mr. Ray Nabors, Area Entomology Specialist,
 Portageville, Missouri
- 2:30 - 3:00 p.m. Business Meeting
- 3:00 - 3:30 p.m. Prizes
- 3:30 - 4:00 p.m. Adjournment

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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