President's Message

First, let me start by introducing myself. My name is William Childers. My wife's name is Jo Carol, and I have two daughters, Elizabeth and Christina. I also have a son, Scott Childers. I live in York, South Carolina. I am a former president of the York County Beekeepers. During the past ten years I have been a hobbyist beekeeper. I have taken observation hives to schools, the YMCA, nature museums, and civic events. Participating in our local and state beekeeper groups and meeting beekeepers from across South Carolina, North Carolina, and other states has been inspiring, informative, and fun. I look forward to serving you as president of South Carolina Beekeepers.

The South Carolina/North Carolina State Beekeepers met in Albemarle, NC on April 9-10, 1999. North Carolina hosted the meeting and my hat is off to them. The programs, facility, entertainment, and banquet was wonderful. A very special thanks to the wives who prepared and served sandwiches, baked goods of all descriptions, and beverages throughout the duration of the meeting.

The South Carolina Executive Committee met at the Lexington County Cooperative Extension Office on May 3, 1999. We selected recipients for the "1999 South Carolina Beekeeper of the Year Award" and the "1999 County Agent of the Year," both to be announced at our summer meeting in Clemson, SC, July 15-17. And while on that subject let me thank the committee, with a special thanks to Dr. Hood for putting together a great program that you will find educational, and informative.

During the South Carolina Executive Committee meeting we also discussed SCB's Spring and Summer meetings for the year 2000. The committee would like to hear from you! Please suggest speakers, topics, workshops, etc. This is your meeting, tell us what you want to happen. Your help is also needed to help plan for the next joint SC/NC Beekeepers Meeting that will take place in 2001. Where would you like to see it held? Please suggest any locations or speakers for this meeting as well.

The committee discussed the small hive beetle. Appropriate treatment and optional control measures are being considered. We hope we can report some good news at our summer meeting.

The media has made a bunch of hype concerning the year 2000. I would like to encourage all of you to dedicate the year 2000 as a new beginning for young kids. Invite the youth to your local meetings and to beekeeping courses, and also to your bee yard. This has the makings of a good year for beekeepers. I wish you success and look forward to seeing you at the Clemson meeting.

William Childers
President of South Carolina Beekeepers
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803-684-6345
E-mail: scbee@hotmail.com

South Carolina Beekeepers
Summer Meeting

The summer meeting of the South Carolina Beekeepers will be held at Clemson University, Clemson, SC on July 15-17. The meeting will begin at 1:00 P.M. on Thursday, 15 July in the P&AS Building Auditorium with an introductory beekeeping short course which is open to all beekeepers, but especially to those just getting started. Various experienced South Carolina beekeepers will be instructors for this course.

On Friday, 16 July we will begin with a general session with several out-of-state speakers including Keith Delaplane from the Univ. of Georgia, Hachiro Shimanuki from the Beltsville, Maryland Bee Lab, Reg Wilbanks from Wilbanks
Apiaries, Claxton, Georgia and Bill Wilson from the Weslaco, Texas Bee Lab.

An afternoon of workshops are planned for Friday including several informative sessions which you may attend only three. On Saturday morning, we will have another general session that will include many interesting topics. For more meeting details, see the program that is included with this newsletter.

A chicken barbecue dinner is planned for Friday evening at Jimmy Howard’s home in Pendleton. Activities scheduled are the annual horseshoe pitching tournery, smoker lighting contest and a tall tales contest. Dinner including half chicken, cole slaw, beans, chips, bread and tea will be served for $5/plate.

The Clemson House Residence Hall on campus has rooms for lodging at $22 per night, single or double occupancy (linen cost $6 extra). Linen packets include sheets, two towels, washcloth, blanket, and pillow. Room registration will be at the Clemson House front desk. You may make reservations by calling (864) 656-0594 between 8:4:30.

The Madren Continuing Education and Conference Center located on campus has lodging available. Suites begin at $105 and Executive rooms, king bed, are $75 and two double beds $90 including continental breakfast. For reservations, call toll free 1-888-654-9020.

Other accommodations are available off campus in the Clemson area as follows: Clemson Holiday Inn, $52.00, (864)-654-4450; Clemson Comfort Inn, $51, (864)-653-3600, includes continental breakfast; Clemson Hampton Inn, $61, (864)-653-7744, includes continental breakfast; Clemson Ramada Inn, $49, (864)-654-7501, includes continental breakfast, Clemson Days Inn, $51, (864) 653-4411, Clemson Sleep Inn, $49, (864) 653-6000. Mention that you are attending the South Carolina Beekeepers Convention and would like to get the University rate.

Let’s continue to make the South Carolina Beekeepers summer meeting a great success; invite some beekeeping friends to come along for an educational vacation. If you have questions about the meeting, please contact Mike Hood, ph. 864-656-0346.

STATE FAIR

1999

The 1999 South Carolina State Fair is scheduled to be held October 7-17, in Columbia. Our beekeeping exhibit at the Fair provides us a great opportunity to promote our products and the beekeeping industry. Fair visitors have been fascinated by our attractive displays of honey and other apiary products, including the observation hive and other educational items.

Our hats are off to those who participated in the 1998 Fair, especially Cliff Ward who served as coordinator of our booth. Cliff Ward has agreed to serve again this year as coordinator and will be giving a “State Fair Report” at our summer meeting in Clemson. Beekeepers who worked the booth last year were given the opportunity to sell their honey. I’ve heard some beekeepers did quite well so come to our summer meeting prepared to sign up to spend a day at the Fair.

Plan now to enter some of your most attractive products and possibly an exhibit in the competition. Honey will be judged on absence of granulation, cleanliness (absence of lint, wax and foam), flavor, color and brightness, and overall appearance of the container. There will be two classes of honey competition, light and dark. Each class will have the following entry categories: 1 lb. jar extracted, pint jar extracted, pint jar with comb, quart jar extracted, quart jar with comb, 2 lb. jar extracted and 1 lb. jar with comb. There will be a 1st, 2nd and 3rd place winner for each category with a monetary prize of $10, $8 and $6 awarded respectively. Other categories include 1 lb. beeswax.

A “Best Beekeeping Display” offers the largest monetary prizes ($75, $50, and $25). Displays are judged on educational value, advertising value, attractive arrangement, originality and variety, appearance, and quality of products.

For more details of our South Carolina State Fair booth, call Cliff Ward in Columbia at (803) 794-5633.
Update: The Small Hive Beetle

Field studies indicate that the small hive beetle’s life cycle was interrupted by a winter diapause which lasted about 4-5 months in coastal South Carolina. Only a couple of heavily infested colonies were reported to have had beetle larvae present in winter. Adult beetles overwintered in bee colonies without beetle larvae present in the hive or beetle pupae in the soil beneath the colonies. It is not known if beetle eggs overwinter in colonies. First generation larvae were first discovered in experimental colonies in late April. An inside hive beetle trap to eliminate these overwintering adults may prove to be an effective means of control.

Many beekeepers have reported ineffective beetle control with Bayer Bee Strips this past winter and early spring when using the product as directed on the label. In cooler weather beetles tend to locate in or near the bee cluster and are rarely found on the hive floor where treatment is prescribed. The product should be very effective when daytime temperatures reach 70 degrees or above.

An additional small hive beetle control product, Gard Star, is now available to beekeepers. The new product is used as a soil drench beneath beetle infested colonies to kill pupae that enter the soil to complete the life cycle. Beekeepers should use this product only when beetles are present and not as a preventive treatment. The application should be limited to a 2 feet radius soil treatment around the colony being very careful not to apply the product on bees or near the hive entrance. As with all pesticides use the product as specified on the label.

The Small Hive Beetle from

a Regulatory Perspective

by Dr. Neil Ogg, Director
Regulatory and Public Service Programs

I want to introduce myself to South Carolina beekeepers. I am the new Director for Regulatory and Public Service Programs. I began this position in July 1998. If you are not familiar with Regulatory and Public Service Programs the following will help. Since 1890 Regulatory and Public Service Programs has been an integral part of the Clemson University mission by ensuring the safe use of agricultural products, such as lime, pesticides, fertilizer and through its service and regulatory programs involving quarantined pests, nursery inspections, pesticides, and seed quality.

OUR MISSION:
To ensure safe & legal use of pesticides; the quality of fertilizer & lime; the prevention & control of introduced plant pests & pests of honey bees; the certification of seed purity/germination; the certification of freedom from plant pests in a nursery, greenhouse & transplants; and to administer such programs as Quality Assurance & Identity Preserved for transgenic crops, pesticide container recycling, IPM in public schools, boll weevil eradication, etc.

I have been interested in beekeeping since 1974. I am a hobbyist only. I have helped evolve the Department of Pesticide Regulation’s policies on honey bees and pesticide use. I have inspected colonies infested with the small hive beetle.

If you have not witnessed the destruction these beetles can cause first hand, you will be shocked to see how damaging they can be.

It is with no small amount of concern that I and Dr. Jack Jackson met with the South Carolina Beekeepers Executive Committee and several commercial beekeepers on May 3, 1999 in Lexington, SC. At that time I discussed the regulatory options with the small hive beetle with the Committee and several commercial beekeepers. I wanted to learn the beekeepers point of view regarding an intrastate quarantine. A quarantine, if imposed, would not allow movement of bees from infested counties into non-infested
counties. The SCB Executive Committee gave favorable response to a quarantine, while the commercial beekeepers were opposed.

I have learned that small hive beetle infested bees have been shipped into the upstate before research revealed that the Bayer Bee Strip, the control for small hive beetles, must be applied to the hive with temperatures above 70°F for at least three consecutive days. Note: that honey production cannot be made while under the Bayer Bee Strip treatment.

I asked Dr. Jack Jackson, Department Head, Plant Industry to research the guidelines of the National Plant Board to determine if the biology of the small hive beetle was such that an intrastate quarantine could be based on sound science. We now know that the small hive beetle is found in 17 South Carolina counties, 20 counties in Florida, 21 counties in Georgia, six counties in North Carolina and that it has overwintered in Minnesota. It also has been found in bees shipped from South Carolina and other states in Ohio, New Jersey, and Pennsylvania. There is information that the adult beetle feeds on fermenting watermelons, cantaloupes, etc.

The result of Plant Industry's analysis is that a natural spread of the small hive beetle into the endangered area, the upstate, is imminent. This means that the small hive beetle's biology is such that it will spread into the upstate with or without a quarantine.

I have, thus, decided not to subject the small hive beetle to an intrastate quarantine. The Department of Plant Industry will develop a compliance agreement with commercial beekeepers to ensure that they treat bee hives being moved into the upstate according to a set criteria. When bees are shipped next year, all available personnel in Regulatory and Public Service Programs will assist in inspecting those hives to ensure that no more bees are shipped out of state while infested with the small hive beetle.

We need your help. If you have bees in the infested counties of South Carolina, see map, treat them with Bayer Bee Strip when temperatures are above 70°F for at least three consecutive days and perform a careful inspection of the hive(s) to ensure that all small hive beetles are dead before moving them into a non-infested county. If you are a commercial beekeeper, contact us for the compliance agreement. **Do not move infested bees into non-infested counties!**

Thank you for your input, help, and let us work together to slow the spread of yet another obstacle to beekeeping.
The case for hygienic bees: A little - used technology

by Tom Sanford

The honey bee is perhaps one of nature’s neatest and cleanest organisms. These characteristics are especially important in social insects. Numbers of individuals crowded together for extended periods is risky because if one becomes infested with a disease or parasite, the chances of others likewise being affected are very great. In human history, this tendency is well exhibited in great disease epidemics, such as those associated with the “Black Death,” or bubonic plague. Sanitation in humans was found wanting in populations and their fleas that spread the bacterium Yersinia pestis (http://communityhigh.org/~katelevy/plague/index.html).

Like humans, honey bees are not necessarily equal when it comes to keeping a tidy house. We now know this tendency is ruled by genetics and thus determined by chance in bee populations. It was Dr. Walter Rothenbuhler, retired from the Ohio State University, who first used the term “hygienic behavior,” for this trait, according to Drs. M. Spivak (http://www.ent.agri.umn.edu/Faculty/spivcv.htm) and M. Guilliam (http://gears.tucson.ars.ag.gov/home/gilliam/). They have written a detailed review of the subject, which will soon appear in Bee World, published by the International Bee Research Association (http://www.cf.ac.uk/ibra/index/html). Dr. O.W. Park and colleagues working at Iowa Agricultural Experiment Station in the 1930s pioneered this work in their attempt to find honey bees resistant to American foulbrood (AFB) (http://hammock.ifas.ufl.edu/txt/fairs/1253).

Ideas leading to the current knowledge of hygienic behavior proceeded through several stages, according to Spivak and Gilliam:

1. Determining variation in AFB resistance in bee populations.
   a. Resistance to AFB consists of the colony’s ability to detect and remove brood before the causative organism (Bacillus larvae, now renamed Paenibacillus larvae) reaches the infectious spore state.
   b. Early removal of diseased larvae, which contain noninfectious rods only, prevents spread of the disease, but removal of spore-infected larvae contributes to transmitting the disease.
   c. Light cases may sometimes be overcome, but heavy cases are not. Spread of the disease is not so much determined by the number of spores, but by the extent to which general contamination is produced by removing diseased brood.
   d. Since diseased brood is removed whether or not a colony recovers from the disease, it is evident that colony resistance does not depend entirely on this behavioral characteristic.

1. Determining whether AFB resistance was behavioral or physiological. Dr. Rothenbuhler and V. Thompson subsequently showed that although resistance was behavioral in adult worker bees, it was also physiological or inherent in larvae.

2. Determining the genetics of this trait in worker honey bees. This was a major focus of Dr. Rothenbuhler and his students at the Ohio State University until the early 1960s. The results are summarized by Spivak and Gilliam as a two-locus process of uncapping a cell containing dead brood and removing the contents. Both characteristics are thought to be recessive and found at different locations (loci) on the chromosome. Thus, two recessive genes are needed at two separate locations on the chromosome before workers show both traits. There could be intermediate populations, therefore, that may show one trait (uncapping), but not the other (removing) with respect to affected larvae.
Dr. Rothenbuhler appears to have been remarkably prescient in coining the term “hygienic behavior.” Since his landmark experiments on AFB resistance, this trait has been determined to be responsible for a number of other phenomena observed in honey bees. According to Spivak and Gilliam, these include:

1. Resistance to chalkbrood. This disease, first discovered in the United States in the 1960s, is now found throughout North America.<sup>1</sup> Since the causal organism is a fungus (Ascochaeta apis) that attacks brood, removal of affected larvae by hygienic bees would seem to be a natural defense mechanism. Both M. Gilliam and S. Taber have been responsible for determining that hygienic behavior indeed confers chalkbrood resistance. The practical results from their research include testing for hygienic behavior, feeding homogenized chalkbrood mummies as a screening tool for resistance, requeening colonies found susceptible to chalkbrood, and preventing symptoms by eliminating stress and ensuring optimal nutrition.

2. Resistance to European foulbrood (EFB)<sup>2</sup> This concept has much less research behind it. However, the same mechanism found in resistance to AFB or chalkbrood would appear to apply for this disease as well.

3. Resistance to Varroa mites<sup>3</sup>. Research in this area is continuing and seems to hold great promise. It has been shown that the native host of Varroa, Apis cerana, routinely removes infested brood more efficiently than many populations of Apis mellifera. Spivak and Gilliam conclude that removing infested pupae may theoretically limit the growth of mite populations by prematurely releasing young mites that can’t complete development. It may also damage the mother mite, and/or extend her time being carried by adult bees during what is called the “phoretic” stage.

Spivak and Gilliam credit Steve Taber<sup>4</sup>, retired researcher at the USDA Tucson Bee Laboratory<sup>5</sup>, for helping to popularize the hygienic behavior concept. Among other things, he helped establish one of the current techniques for assaying hygienic behavior, which uses a small section (2 X 2.5 inches) of freeze-killed brood. Originally, full frames were used by those developing the test, and in other variations, larvae were killed by cyanide or piercing them in the cell with insect pins. Dr. Jerry Bromenshenk and colleagues at the University of Montana<sup>6</sup> pioneered a further development using liquid nitrogen in a round pipe or container to freeze a part of the comb in the field.

The results and discussion above reveal that hygienic behavior is highly desirable in honey bee populations for many reasons. Unfortunately, it is employed by too few breeders, Spivak and Gilliam conclude. However, there has been some progress, including development of a commercial bee called DR (Disease Resistant) by Taber Apiaries in California, employment of the technique in Argentina to combat a serious AFB problem<sup>7</sup>, and other programs used by USDA and University researchers and beekeeper cooperatives<sup>8</sup>. Finally, selection for hygienic queens is often the byproduct of the one common solution beekeepers often employ for many problems — routine requeening.

Although screening reveals the genetic tendency to exhibit colony hygienic behavior, this cannot be considered proof that populations are in fact resistant to specific maladies, Spivak and Gilliam say. It is important to go the next step and challenge colonies with the actual pathogen or organism in question.

Hygienic behavior is heritable and it can be selected for, Spivak and Gilliam conclude. Unfortunately, most colonies exhibit low levels because of its recessive nature. Thus, selection for the trait should become a routine part of any bee breeding operation. Commercially available lines of hygienic stock would help many beekeepers overcome a multitude of problems, especially those associated with mites and disease. This would reduce operating costs by
minimizing use of chemicals, with their concomitant possibilities of bee, colony and product contamination. Finally, standard queen rearing and breeding techniques can be used to produce many hygienic queens from a few mothers using any race of honey bees. Research has clearly demonstrated the benefits of hygienic bees. It provides many benefits with no demonstrable negative effects Spivak and Gilliam say. the unspoken question remains, however. Why is this technology not more widely used by the beekeeping industry?

Source - APIS Florida Extension Beekeeping Newsletter — Sept. '98

The buzz: America is sweet on honey

Pooh Bear’s cupboards can hardly be bare these days. It seems that just about every category in the grocery store has some product that is honey-enhanced.

There are King’s Hawaiian Honey Rolls, Mrs. Baird’s Honey ‘n Wheat bread, and Nature’s Own Honey Wheat Hamburger Buns in the bakery. Michelob Honey Lager in the cooler. T. Marzetti’s Honey Dijon Dressing in the produce section. Underwood packages a Honey Ham Spread; the snack section sells Planters Honey Roasted Peanuts and Snyder’s of Hanover Tangy Honey Mustard Dip.

The condiment section stocks Grey Poupon Honey Mustard and Kraft Honey Barbecue Sauce. The baking aisle displays Quick Loaf Honey Oatmeal Bread Mix and Krusteaz Honey Cornbread Mix. The frozen-food cooler stocks Banquet Honey BBQ Flavor Wings. And let’s not get started on cereal and crackers.

The National Honey Board (the promotion organ of honey producers and importers) began tacking 11 years ago. According to its studies, an average of 20 new products including honey are introduced every month. In 1970, Americans consumed 243 million pounds of honey. In 1993, we consumed 313 million pounds.

From hair care to a Long Island company that uses honey in pet foods for hamsters, birds and gerbils, Americans put their faith in bee nectar.

Honey does include trace amounts of vitamins, minerals and all-the-vogue antioxidants. But what might make honey the sleeper of the natural-food world is a current study at the University of Connecticut.

A scientist there is finally examining the long-rumored but never tested theory of whether eating locally produced honey will help allergy sufferers assailed by grasses and weeds.


Contributions of Agriculture

- In South Carolina, agriculture and agribusiness provide 458,000 full and part-time jobs.
- In the United States, agriculture provides jobs for 23 million Americans — 17% of the work force.
- The annual economic impact of agriculture and agribusiness in South Carolina is 26.7 billion dollars.
- In the U.S., agriculture generates more than 16% of our nation’s gross national product.
- Americans spend less than 12% of their disposable income for food. That compares to 16% in France, 18% in Japan, 29% in Thailand, 32% in Mexico, 48% in China and 53% in India.
- It takes only 40 days for most Americans to earn enough money to pay for their food supply for an entire year.
- That compares to 129 days it takes the average American to save enough money to pay Federal, State and Local taxes.
- It is estimated that 27% of our food supply is thrown away or wasted. Think of the food that is left on our plates each day ... the food that is wasted in restaurants and at banquets we have attended.
Agricultural exports are the only consistent contributors to the U.S. balance of trade.

Farmers and foresters are the fires environmentalists. They do protect the land and water . . . and did you know that farmers and ranchers provide food and habitat for 75% of the nation’s wildlife?

More than 82% of U.S. farmland is owned by individuals, husbands and wives and family partnerships – 15% is owned by corporations and one half of these are family corporations.

Less than 3% of U.S. farmland is foreign owned.

Each U.S. farm worker produces twice as much as a European farm worker and four times more than the average Japanese farm worker does.

Honey Oatmeal Chews
Bee Blossom Farms

1/2 cup butter or oleo
1 cup Honey
1 egg
1/2 tsp. baking powder
1 1/2 cups quick rolled oats
1/2 cup chopped almonds
3/4 cup all-purpose flour
1 tsp. baking soda
1 tsp. vanilla
3 1/4 tsp. salt
1 1/2 cups flaked coconut

Cream butter, Honey until light and fluffy. Add egg and vanilla and beat well. Sift flour, soda, baking powder and salt. Add to creamed mixture. Stir in oats, coconut and almonds. Spread in greased 9 x 13 x 2" baking pan. Bake at 350° 25-30 minutes. When cool sprinkle with powdered sugar, cut into squares.

Peanut Butter Surprise Pie
Faye Martin

1 9-inch pie crust
2 1/2 cups milk
1/4 cup warmed honey (1)
1/4 cup cornstarch
4 egg yolks, beaten
2 tablespoons butter
1 teaspoon vanilla
3/4 cup peanut butter
1/4 cup warmed honey (2)
4 egg whites
2 teaspoons warmed honey (3)

In saucepan, combine milk, 1/4 cup warmed honey (1), and cornstarch. Bring to boil over low heat, stirring constantly. Pour a little of the hot mixture over egg yolks, then return to the milk mixture in the saucepan and cook slowly until thick, continuing to stir. Remove from heat and add butter and vanilla. Combine peanut butter and 1/4 cup warmed honey (2) and spread over the bottom of baked pie shell. Beat egg whites until frothy, then slowly and 2 teaspoons warmed honey (3), a few drops at a time, and beat until stiff, smooth and shiny. Pour custard over peanut butter mixture in pie shell. Cover with meringue and bake in 350°F oven about 10 minutes until lightly browned. Chill thoroughly before serving.

SOUTH CAROLINA BEEKEEPERS
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Tommy Grant (864)972-3399
Charles Ford (803)324-7027

William Michael Hood
Extension Apiculturist
1999 SOUTH CAROLINA BEEKEEPERSS SUMMER MEETING SCHEDULE

Thursday, July 15, 1999

12:00 N . . . Room Registration - Clemson House
Meeting Registration - P&A Bldg Lobby - $3 Members, $5 Family,
$8 Nonmembers
Exhibitor Setup - P&A Bldg Lobby

1:00 PM . . . Beginner Beekeeping Short Course - Various Instructors

5:30 . . . . End of Short Course
SCBA Executive Committee Meeting

Friday, July 16

8:00 AM . . . Invocation
Welcome to Clemson University - Mac Horton, Chair, Department of
Entomology, Clemson University

8:10 . . . . . Announcements and Introductions - Mike Hood, Extension Apiculturist, CU,
Executive Secretary, SCBA

8:20 . . . . . President's Address - Bill Childers, President - SCBA, York

8:35 . . . . . Legislative Update - Representative Bud Webb, District No. 3, Pickens County

8:50 . . . . . News from the American Beekeeping Federation - Reg Wilbanks, Past President,
ABF, Claxton, GA.

9:00 . . . . . South Carolina Beekeeping Update - Mike Hood, Extension/Research
Apiculturist, Clemson University

9:20 . . . . . SCBA Business Meeting - Bill Childers, President - SCBA

9:35 . . . . . Break - Visit Exhibitors

10:00 . . . . . Door Prizes

10:05 . . . . . US Beekeeping Industry at a Glance - H. Shimanuki - Research Apiculturist,
USDA Bee Lab, Beltsville, MD.

10:30 . . . . . Small Hive Beetle Research - Bill Wilson - Research Apiculturist - Lead Scientist,
USDA Bee Lab, Weslaco, Texas

10:55 . . . . Small Hive Beetle Status in Georgia - Keith Delaplane - Extension/Research
Apiculturist, University of Georgia, Athens
1999 SOUTH CAROLINA BEEKEEPERS SUMMER MEETING SCHEDULE

11:20 ...... Update on Varroa Mite Control - Keith Delaplane

11:45 ...... Lunch on your own

1:10 ...... Announcements, Door Prizes and Workshop Introduction

1:30 ...... Concurrent Workshops (All sessions begin on the half hour)
1. Small Hive Beetle Detection & Control - Keith Delaplane
2. Other Honey Bee Disease & Pests Problems - H. Shimanuki & Bill Wilson
4. How to Make Up Nucs - Steve Taber, Elgin, SC
5. Packaging & Marketing Honey - Mr. & Mrs. Carl Webb, Clarkesville, GA.  
   (Mrs. Webb is President of the Georgia Beekeepers)
6. SC Master Beekeeper Program Certified and Journeyman Level Test Offered

4:30 ...... Depart for Evening Activities
   Horseshoe Pitching Tourney
   Smoker Lighting Contest
   Chicken Barbecue Supper ($5/Plate)
   Tall Tales Contest (and/or other activities)

Saturday, July 17

8:00 ...... Announcements & Door Prizes

8:10 ...... Small Hive Beetle from a Regulatory Perspective - Neil Ogg, Director Regulatory &  
   Public Service Programs, Clemson University

8:30 ...... Small Hive Beetle Research in South Carolina - Mike Hood

8:55 ...... Varroa Mite Resistance to Apistan and Other Chemicals - Bill Wilson

9:25 ...... Future Challenges for the US Beekeeping Industry - H. Shimanuki

9:55 ...... Break - Visit Exhibitors

10:10 ...... Door Prizes

10:15 ...... Properties of Honey - Paul Dawson, Assoc. Prof., Food Science, Clemson University

10:45 ...... How to Minimize Queen Problems - Steve Taber, Elgin

11:15 ...... Current Status of the Africanized Honey Bee in Northern Mexico and Texas  
   Bill Wilson
1999 SOUTH CAROLINA BEEKEEPERS SUMMER MEETING SCHEDULE

11:40 . . . . SC State Fair News - Cliff Ward, Director SCBA, Columbia

11:50 . . . . District Reports
   1. Savannah River Valley
   2. Charleston
   3. Pee Dee
   4. Sandhills
   5. Piedmont
   6. Mountain

12:15 . . . . End - Have a Safe Trip Home!
   SCBA Executive Committee Meeting

SPouse/FAMILY PROGRAM

Friday, July 16, 1999

8:30 AM . . . Meet at P & A Bldg Lobby
8:35 . . . . Depart for a Tour of the Clemson University "Museum of Natural History" and "Apparel Research Center"
11:30 . . . . Return to P&A Building
Please mail your change of address to: News for SC Beekeepers, Laura Reeves, 113 Long Hall, Clemson University, Clemson, SC 29634-0365,

Name: ________________________________

Address: _________________________________ State ________ Zip Code ________________

County: __________________ Phone number: (_____) _______ Member ___ Non-Member ___