

News For South Carolina Beekeepers



October '98

Vol. 9, No. 3

President's Message

This year looked like it was going to be an excellent year for beekeeping. We had an early honey flow due to unusual warm weather. Many beekeepers were caught off guard by being not ready and had to scramble to get hives ready and supered. The State Beekeepers also prepared a very informative spring meeting in Columbia. We got to meet many old friends. New beekeepers got a chance to talk about their expectations for the coming year. We also planned for the '98-summer conference.

This year we had a great turn out at our conferences due to the quality of speakers and programs and the marketing and promotion of our programs by the local beekeeping organizations. The local organizations are a great asset to the state beekeepers because they meet year round to discuss beekeeping procedures.

The state beekeepers really accomplished several milestones this year. Our long awaited revised constitution was passed and the organization is now recognized as a non-profit corporation with a workable set of bylaws. Thanks to David MacFawn and the executive committee and those of you who approved our recommendations.

Another major project is starting the second level of the Master Beekeeping program. The Journeyman Level was started in the spring and refined during the summer meeting. Mike Hood and David MacFawn presented the lecture portion over a two day period. Quite a few of our members took the exam on Saturday morning at the conference and many passed. This program is still being refined. The next step is the documentation of public service credits and the practical exam.

I am pleased to announce that the 1998 Beekeeper of the Year is Archie Biering of Cottageville. The 1998 Extension Agent of the Year is Gilbert Miller of Bamberg. The organization which had the largest number of

members in attendance was the Lowcountry Beekeepers. We changed the way we count the organization with the largest attendance. It will be done at the registration table when you register for the conference. This is a much better method than counting heads on Saturday morning when some members have already left to go home.

The State Beekeepers are getting ready to nominate new members to the Board of Directors. The nominating committee is made up of Archie Biering of the Lowcountry (843-835-5912), Jack Morris of Midstate (803-783-0451), Larry Williams of the Upstate (864-338-5470) and Ron Moore of the Pee Dee (843-493-2143). If you would like to serve as a board member please contact one of these individuals and let them know. A letter from you to one of these individuals will be very helpful. Outline what you have done as a beekeeper, why you want to be on the board and specific goals you want to accomplish during your term of three years would be helpful.

The last area I want to cover is the new pest in 12 counties in South Carolina. The small hive beetle has been around longer than most of us realize. I first saw them in the summer of 97 in Hampton County. (the beetle was originally thought to be only a nuisance hive pest.) Today it is causing much damage. Beekeepers who work up to 200 hives in our coastal area are finding over 50% infected. The beetles affect both strong and weak colonies. The house and guard bees have a difficult time trying to keep them out. As a result they lay eggs in the top supers and the bees are eventually pushed out. The bees leave and wax moths take over. There is work on emergency treatment product to approve a control. Keep in touch with your local organizations and the Clemson Extension Centers. Mike Hood has an excellent brochure on Clemson Web Site. Take the time to check it out.

Don't forget to plan for the Spring '99 combined meeting in April 1999 at Albermarle, North Carolina. Let's have a big turnout and win the Bee Bowl.



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SC Beekeeping Update

A major topic of discussion at our summer meeting this year was the "small hive beetle." Many of our beekeepers are being affected by this newly imported beetle especially in our coastal counties. You will find included in this newsletter a "Small Hive Beetle Information Leaflet" which covers much of the information known to date. You may access this leaflet which includes color photos on our Clemson University Dept. of Entomology web page, <http://entweb.clemson.edu/>.

South Carolina is currently cooperating with the Florida Dept. of Agriculture in seeking an emergency use label for a product which has proven to be a very effective in-hive treatment for the small hive beetle.

The South Carolina Beekeepers will travel to Albemarle, North Carolina to meet jointly with the North Carolina State Beekeepers on 9-10 April 1999. Mark your calendars now to participate in this excellent meeting which will be hosted by our Tarheel State beekeeping friends. Albemarle is located about 30 miles east of Charlotte. Dr. John Ambrose and the NCSBA Executive Committee have been busy making plans for this exciting meeting. You will be receiving more information on this meeting in our next newsletter.

A queen rearing short course will be offered 13-15 May 1999 at Clemson University, Cherry Farm Honey Bee Laboratory and Workshop. The primary instructors for this course will be Steve Taber and Wyatt Mangum. Steve Taber has over 50 years of queen rearing experience and is a regular column writer for the American Bee Journal. Wyatt Mangum is an expert on queen rearing, queen cell biology, and queen management. Wyatt is also a column writer for the American Bee Journal and is currently employed at Mary Washington College in Virginia.

Candidates for this course should have a basic knowledge of honey bee biology and should be an experienced beekeeper. Course registration fee is \$250 which will cover queen rearing supplies, lunch meals, and other course expenses. Deadline for registration is 15 March 1999 and class size will be limited to the first 20 applicants. Local lodging

information will be provided with the registration packet. For registration or more information contact Mike Hood, Dept of Entomology, 305 Long Hall, Clemson University, Clemson, SC 29634, Ph. 864-656-0346 or Email: mhood@clemson.edu.

Russian Queens Bee-little Mites' Impact

Federal scientists hope to establish a Russian dynasty throughout the United States—one populated by the progeny of Asian-hatched honeybees, renowned for their resistance to mites.

That goal moved a step closer last week. The first generation of bees produced by 90 expatriated queens, just released from quarantine, has significantly outperformed U.S. members of their species, *Apis mellifera*, in resisting infestations by varroa mites.

This parasite, which first turned up among U.S. honeybees 11 years ago, has taken a devastating toll. Feeding off their hosts' blood, the energy-sapping mites weaken and soon kill the bees (SN: 2/8/97, p. 92). Moreover, mites in four states have developed resistance to the one pesticide approved for use against them, notes Thomas E. Rinderer of the U.S. Department of Agriculture honeybee laboratory in Baton Rouge, La.

Such pesticide-resistance leaves beekeepers defenseless, he says. Indeed, he notes, because wild honeybees never received treatment, "they're gone." Though swarms that stray from beekeepers' colonies may survive a few months in the wild, he says, these days "they're doomed, too."

The parasites develop on bee pupae. Once a bee emerges as an adult, it normally lives 30 days or more, depending upon how hard it works. But an infested worker may survive only 3 to 5 days in its sickly state. The mites, which also attack adults, reproduces on a 10-day cycle, allowing them to quickly kill off a colony.

In the new tests, Rinderer's team exposed 90 parasite free colonies to mites. Each colony contained a Russian-hatched queen and up to 60,000 of her offspring. About 12 weeks later, the USDA scientists tallied how many mites infested the adults and pupae.

From previous data on U.S. colonies, "we would have expected an 11.4-fold increase in mites during the

test period,” Rinderer says. Instead “we got an average 3.9-fold increase – and many colonies had no increase. This is extremely exciting.”

Though many honeybee populations along the Primorski region of Russia’s Pacific coast have had a century to develop natural resistance to the varroa mite, bees which arrived there more recently show little ability to coexist with the parasite. The current tests were designed to identify and eliminate these weaker bees from any U.S. breeding program.

Imported a year ago, the queens, which can live up to three years, are becoming quite elderly. Colonies headed by their daughters, however, are now beginning a new wave of tests to compare them directly with U.S. hives. The queens, which mate only once, carry sperm from descendants of Primorski hatched bees. By next spring, Rinderer’s team plans to begin distributing mated Russian queens to beekeepers for experiments to evaluate how well they pollinate plants and produce honey under field conditions.

The Russian queens are fueling considerable excitement among apiarists, says Troy Fore of the American Beekeeping Federation in Jesup, Ga. The cost of treating colonies with the varroa miticide can eat up 20 percent of a beekeeper’s gross earnings – or about 80 percent of the intended profit, he says. Bees with Russian genes should reduce the need for some or all of these expensive treatments, he adds. The Russian queens also “offer to throw the [mite] resistance gene into [stray] bees,” establishing a self-sustaining feral community, notes beekeeper Kim Flottum, who edits *Bee Culture* in Medina, Ohio.
– J. Raloff

Source: *Science News*, Vol. 154, August 8, 1998

Formic Acid Gel gets the go ahead

An article from United States Department of Agriculture:

“Formic Acid Gel Protects Bees and People”
By Jill Lee August 19, 1998

Beekeepers could soon have an alternative way to save their hives from Varroa mites, pests that are becoming resistant to the standard control, fluvalinate, sold as Apistan. A new treatment – a gel containing

formic acid, has been licensed to industry by the USDA’s Agricultural Research Service.

Apistan-resistant mites have been found in parts of the United States. ARS scientists at the Bee Research Laboratory in Beltsville, Md., developed the formic acid gel and have applied for a patent. In field tests, the formic acid gel killed up to 84 percent of Varroa mites and 100 percent of tracheal mites, another bee pest.

ARS issued a license Monday to Betterbee, Inc., of Greenwich, N.Y. The company must obtain approval from the Environmental Protection Agency once they develop a product. The formic acid gel could be available to beekeepers next spring.

The gel formulation can ease the path to EPA registration because it reduces the risk of exposure to formic acid compared with the formic acid spray used in Europe. The spray is effective, but the highly toxic acid evaporates quickly. This puts bees and beekeepers at risk if spraying is done incorrectly. Also, spraying must be repeated unlike the gel.

The new treatment is composed of formic acid mixed with a food-grade gelling agent and sealed in a small plastic bag. Beekeepers would simply slice open the bag and leave it in the hive. After the acid evaporates, it leaves a harmless residue that won’t contaminate the hive or the honey.

Varroa mites cause economic losses not only to beekeepers but also to farmers who depend on honey bees to pollinate \$10 billion worth of U.S. crops. In California, for example, half a million bee colonies are needed each year to pollinate the almond crop.

Scientific contact: Hachiro Shimanuki, ARS Bee Research Laboratory, Beltsville, Md., phone (301)504-8975, fax (301)504-8736. Submitted by Jon C. Peacock.

Source: Georgia Beekeepers Association Newsletter, September 1998.

The Sticky Board: A New Apicultural Tool

Most technological advances in beekeeping occurred before the 20th century. One, instrumental insemination, is a child of the early 1900s and took many years to perfect. Another was a change from

feeding sugar to high fructose corn syrup, as that material became more available. Introduction of parasitic mites in the 1980s signaled several more paradigm shifts in beekeeping technology. Discovery that vegetable oil appeared to interfere with transfer of tracheal mites among bees led to greater use of extender patties. Introduction of Varroa caused beekeepers to move toward pesticide applications inside a living beehive. Both mites appear to have spawned a brand new disease, honey bee parasitic mite syndrome (BPMS).

Varroa mite detection resulted in a new technology called the "ether roll," used extensively in Florida by the bee inspection service. This one-step, read-immediately test is relatively inexpensive. This office publishes a video describing it. VT 249 Varroa Mite Detection is available by sending a blank VHS tape to this newsletter's address asking for a copy to be mailed back.

Another tool in Varroa detection is the "sticky board". This is placed on the bottom board of colonies during chemical experiments to determine the number of Varroa that fall off bees. Usually a bottom board insert is used, sprayed with some kind of oily material like PAM. For further information on making this board see <http://pw2.netcom.com/griffes/H1P1.html>. The insert is then covered with a screen, which allows the mites to fall through, but keeps the bees from getting into the mess. Many circumstances besides chemical treatment can lead to Varroa falling off bees and brood it seems, including routine manipulations, grooming and smoking. However, without a sticky board, the mites are free to get back on the bees. Therefore, it makes good sense that the sticky board becomes a permanent fixture in the beehive as a help in reducing the free movement the external mite, Varroa jacobsoni.

APIS, May 1998, Malcolm Sanford, University of Florida.






The Forgotten Pollinators Campaign

A new awareness campaign has been started in Arizona – the Forgotten Pollinators. The campaign will work with land managers, gardeners, biologists, and growers to educate on the importance of insect pollinators.

The Forgotten Pollinators attributes misshapen and

lop-sided fruit and vegetable plants, poor fruit yield, and low grade produce to poor pollination practices. The group has identified that the poor pollination results from parasites that have decimated honeybee populations as well as from shrinking habitats and misused pesticides.

The group has put together an information packet for anyone with an interest in pollination. The packet features sections on:

-  Evaluating pollination effectiveness
 -  Better managing honeybees
 -  Using other types of bees
 -  Pollinators and pesticides
 -  Improving on-farm pollinators habitat
- The packet can be requested by contacting The Forgotten Pollinators Campaign, % The Arizona-Sonora Desert Museum, 2021 N. Kinney Road, Tuscon AZ 85743-8918; tel. (520) 883-1380; fax (520)883-2500. Copies can also be downloaded from the Campaign's Web site, [Http://Desert.Net/museum/fp/](http://Desert.Net/museum/fp/).

Source: ESA Newsletter August 1998

Observations on the Small Hive Beetle, a New Pest of Honey Bees

Fred Singleton
Dept of Plant Industry, Clemson University

In late May, 1998, a beekeeper in St. Lucie County, Florida, discovered beetles severely damaging beehives. Beetle samples were taken and were identified as the small hive beetle, *Aethina tumida*. This insect is a native of South Africa where it is considered only a nuisance for beekeepers. This record of small hive beetle is the first confirmation of this pest in the Western Hemisphere.

During the week of July 5, 1998 I was informed by Dr. H. B. Jackson, head of the Department of Plant Industry at Clemson University of a suspicious

problem in bee hives owned by a hobbyist. On July 10, 1998 I inspected three bee hives just south of Charleston, SC in the community of Meggett, SC. At first the problem seemed to be wax moth, having observed the moth cocoons. Even some wax moth larvae were observed. In this hive there was honey drained to the bottom board and honey was also covering the top of the frames on the supers. However, upon closer examination of another hive in the same yard, I saw small off-white to whitish-yellow larvae numbering in the thousands. Not being a beekeeper myself, I kept thinking wax moth since this I knew was a common problem in bee hives. After closer inspection, I observed several small black beetles on the bottom board of this second hive and collected those I was able to catch. I was actually looking for beetles having been informed about the find of hive beetles in Florida. The larvae were something of a surprise to me, not being informed about larvae in Florida. I also took specimens of larvae just in case these were something other than small wax moth larvae.

The specimens were taken to Glen Landau of APHIS (Animal and Plant Health Inspection Service), USDA in Charleston for an ID on July 13, 1998. He sent them to the Smithsonian Institute in Washington D.C., and they came back positive as small hive beetle, Aethina tumida, on July 14, 1998. This is the first confirmation of this species in South Carolina. Both beetles and larvae collected were the small hive beetle.

After this call came in from Meggett, SC and hive beetles were found there, DPI began the task of inspecting all over the low country and other areas in the southeast part of South Carolina to determine the scope and spread of the small hive beetle. It was found in every bee yard inspected but one in the tri-county area around Charleston, namely Charleston (6 bee yards), Berkeley (5 bee yards), and Dorchester (2 yards) Counties. Since this survey began, small hive beetles have been confirmed in 12 South Carolina counties: Charleston, Berkeley, Dorchester, Colleton, Beaufort, Jasper, Hampton, Barnwell, Bamberg, Lexington, Richland, and Florence Counties. Several bee yards were inspected in Horry and Georgetown counties and no hive beetles were observed. These two counties were inspected quickly after the first week of survey because this is a popular area for migratory beekeepers from states such as New York and Vermont to place bees here for the winter. However, there is no guarantee that this area will be free of beetles in the future. Also inspected were York and Oconee Counties with negative results.

Many have asked how this small hive beetle made its

way from South Africa to the United States. The most logical place is a port somewhere between Charleston and the southern most infested area in Florida. No one can be sure as to the method of entry or where this pest entered this country. Another question being asked is "why wasn't this beetle identified earlier than May 1998?" Several beekeepers in South Carolina and Georgia have stated to me that they have seen this beetle in hives for two to three years, meaning that this beetle may have been present in South Carolina, Georgia, or Florida since 1995 or even earlier. Considering the population levels and damage observed along the coastal zones in these three states in 1998, the small hive beetle probably has been here for several years. It seems that once confirmed and pictures are out showing the beetle, larvae, and damage a large number of beekeepers are saying, "hey, that's what I have been seeing in my hives." No one ever expected to see this beetle in the United States, especially since this small hive beetle is a native of South Africa. In addition, as Dr. Tom Sanford has stated in the August issue of Bee Culture, the small hive beetle was not on APHIS's list of potentially damaging organisms affecting North American bees. Dr. Sanford also noted that "this organism merited only a few paragraphs in the second and third editions of 'Honey Bee Pests, Predators, and Diseases' (Cornell University Press, 1990; The A.I. Root Co., 1997). I took a video in some hives I inspected which shows the damage done by the larvae and also shows a very large population of adult beetles. This video has been shown at several local bee meetings across the state. Many beekeepers are surprised at the degree of damage in the hive and they are also very disturbed about it.

What specifically is the damage that this beetle causes? The damage is done by the larvae. The adult beetle enters the hive and lays eggs in cells, probably pollen and brood cells. They may also lay eggs in any crevice in the hive. Larvae hatch and immediately begin eating pollen and some reports say they eat brood. Reports from South Africa indicate that as the larval population increases, the heat produced by them causes the comb to collapse. If honey is present the honey will begin to ferment and may even be expelled from the cells and run down to the bottom board. If the larvae are abundant enough and there are several layers of supers with honey, the honey can run down to the frames below and cause a real mess on top of the frames. The climax of this is a slurry of honey and larvae that is disgusting. I have even seen larvae and beetles together swimming around in this mess and the beetles not being phased

by being immersed in this slurry. Of course the honey is ruined. This beetle is a very serious pest in its present range in the Southeast U.S. as opposed to being only a nuisance in South Africa.

The scene described above will not be seen in every situation where beetles are observed in bee yards. Normally the following is what you will see if you have beetles infesting your bee yard. When you take the top cover off your bee hive, inspect quickly underneath to see if there are adult beetles scurrying around. I mean quickly, because these beetles are very fast and will try to run from light. If none are seen here, then inspect quickly the edges of the frames where they hang on the box. They can be seen running through the crevices. They can easily be seen if you have those metal spacers where the frames hang. If no beetles are seen at this time, then you must go to the bottom board and inspect there. If beetles are present in the hive then you have the potential of problems in several weeks, namely the destruction done by larvae as previously described.

I have seen hives with only one solitary beetle, others with hundreds of beetles running around, some hives with only larvae, and some with beetles and larvae. When larvae are seen then damage to brood and honey is imminent. Some have seemed to indicate that this beetle problem is restricted to hives already weakened by some other pest or in hives that are just too weak to ward off this pest. Based on my observations, I do not believe this to be true. I have seen beetles in very strong hives and in poorly kept hives. In the first location in Megget, SC, there was one strong hive remaining out of the three that I inspected. Initially this hive did not have any beetles and the two other hives were killed or bees driven off by larval damage. After about 45 days, this one remaining hive is infested with quite a large number of beetles. It is still strong, but I believe it will finally succumb to the beetles. I already mentioned where this beetle has been found in South Carolina. It appears that small hive beetle are established along the coast south of Georgetown county. In other words, just as fire ants are found everywhere, small hive beetles are everywhere along the coast. They are probably established also along the Savannah river bordering Jasper and Hampton counties. Even though small hive beetles have been found further inland in other counties does not mean that they are established in those areas. They are being found in isolated areas further inland because of hive equipment or packaged bees being moved from other infested areas. However, as hives and packaged bees are continually being moved, the small hive beetle will become

established in those areas other than the southeastern coastal zone of South Carolina.

Now that we know we are 'blessed' with this damaging pest, what about control? This will be the task of researchers. It will take a lot of time, energy, and ingenuity to determine the best means of control, knowing that any chemical that kills beetles may have a damaging effect on bees. In light of the many other pests and particularly the recent introduction of two damaging mites, the small hive beetle is another blow to beekeeping.

Beginning Beekeeping Course



The Lowcountry and Colleton County Beekeepers will be conducting a one day "Introduction to Beekeeping" course. This course will be scheduled on Saturday, November 14, from 9:00 to 5:00 p.m at "Bee City" in Cottageville, South Carolina. Bee City is located off highway 61 near the Givens State Park. Signs will be posted. (Bee City - 843-835-5912 for reservations)

This workshop will include an introduction to beekeeping and bee biology, equipment needed, installing package bees and collecting swarms, detection and control of diseases and extracting and processing honey. The exam for the "Certified Beekeeper" level of the South Carolina Master Beekeeper Program will be available. A field day will be held in the Spring of 1999 for practical experience of opening a beehive to observe bee behavior and locating queens and to complete the practical portion of the "Certified Beekeepers" program.

The cost for this course is \$25.00 per person or \$30.00 per family. The fee for taking the "Certified Beekeepers" exam is \$5.00. Participants are asked to bring a brown bag lunch. Drinks will be provided.

This course will be taught by Archie Biering, a Certified Beekeeper, President of the Lowcountry Beekeepers and Ron Taylor, a Certified Beekeeper and President of the Colleton and South Carolina Beekeepers and Diane Biering, a Certified Beekeeper.

To register for this course call Archie Biering at 803-835-5912 or Ron Taylor at 803-835-2482 or email: rtaylor421@lowcountry.com.

Murphy's Laws of Beekeeping

1. "Management" in beekeeping means that the bees manage to survive in spite of the beekeeper.
2. The easy solution to a beekeeping problem is readily apparent immediately after you have implemented a difficult solution.
3. A shortcut in beekeeping makes the problem worse in half the time.
4. In any bee management system, what you fail to do has significantly more impact than what you do.
5. The positive result of doing nothing in a beekeeping dilemma is the satisfaction that at least you didn't make the situation worse.
6. Any explanation of a beekeeping manipulation, which is presented so clearly and thoroughly that it cannot possibly be misunderstood, will be.
7. If in doubt about what to do with beekeeping problem, do nothing – the problem might go away.
8. Evaluations of methods for swarm control, queen introduction, comb honey production, etc. are subject to interpretation as follows.

What it says:	What it means:
It works.	It might work if tried.
It really works.	It worked once.
Excellent results.	It worked twice.
Absolutely foolproof.	If you're a fool you can get it to work.
10. The practice of wrapping hives for wintering in the northern regions is highly beneficial for warming the beekeeper.

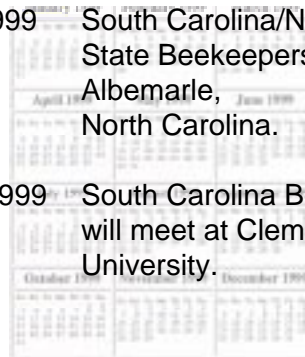
11. There is a greater probability of rain on the day you plan to work with your bees than either on the day before or the day after.

--Pheromeone
Alaska State Beekeepers Association
January 1998
Via March 98 The Speedy Bee

Calendar of Events

April 9-10, 1999 South Carolina/North Carolina State Beekeepers will meet in Albemarle, North Carolina.

July 15-17, 1999 South Carolina Beekeepers will meet at Clemson University.



SOUTH CAROLINA BEEKEEPERS OFFICERS AND BOARD OF DIRECTORS

President: Ron Taylor	(843)835-2482
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Respectfully submitted,

William Michael Hood
Extension Apiculturist

Cooperative extension work in agriculture and home economics state of South Carolina, Clemson University, the United States Department of Agriculture and South Carolina counties cooperating. The Clemson University Cooperative Extension Service offers its programs to people of all ages regardless of race, color, sex, religion, national origin, or disability and is an equal opportunity employer



California Muffins

1	cup sifted flour	¼	cup butter, at room temperature
1	tsp. baking powder	¼	cup honey, preferable orange blossom
¼	tsp. baking soda	1	egg, beaten
½	tsp. salt		grated rind of one orange
½	cup raw wheat germ	½	cup orange juice

Preheat oven to 375°. Butter a muffin tin or popover pan. Sift the flour with the baking powder, soda, and salt; set aside. Cream the butter, then add the honey and beat until smooth and fluffy. Blend in the egg, orange rind, and orange juice. Add the dry ingredients to the creamed mixture, stirring with a wooden spoon just until all the ingredients are moist. The batter will look lumpy. Fill greased tins $\frac{2}{3}$ full and bake for 20 minutes, until rounded and brown. Turn out immediately, bundle in a cloth-lined basket, and bring to the table. Offer butter and honey to top them.

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 ____