

THE HIVE TOOL

Volume XXXIII

February 2009

**PUBLISHED BY
THE CENTRAL MARYLAND
BEEKEEPERS ASSOCIATION
FOUNDED 1973**

President's Frame

February may be a cold, cold month that drives us all closer to the fireplace, but it actually is a very important month in the beekeeping annual cycle. At this point the bees are roughly half way through the winter journey, and it would be a good idea to know if there is enough food to carry the hive the rest of the way. There are usually a few days where the temperature goes up to the more comfortable range, so it's ok to open up the hive without fear of hurting the bees. It's not the cold that's going to get the bees. It'll be the lack of food. So, if there isn't enough, then feeding is a must. Granted "enough" is a tough call. As in all things beekeeping, opinions vary among beekeepers, but if the cluster is roughly half-way up the top box, you should be in good shape. If bees are touching the top of the inner cover because there is little honey left, another visit would be warranted near the end of February.

The January meeting was a great success. There was a lively idea session about the year to come. When the floor is left open to all ideas, it's amazing what people can come up with. We ran out of time with more ideas coming, so we'll have to do this again later into the year to get more great ideas. The general feeling I gathered from the discussion was a keen interest in "natural" beekeeping. Many people were asking for more speakers about that subject, so we could all use less chemicals and be closer, shall we say, "in harmony" with nature. A number of people showed great interest in specific topics of beekeeping. It looks like we'll be able to create some Special Interest Groups. I had expressed interest in doing some queen rearing, so I'll be having a little get together at my house some time in the spring to play around with the hives. Other people were looking to see how Top Bar hives worked as well as how best to prepare nucleus hives. There'll be some groups forming on those topics through the year. The February meeting of the Board will lay out a schedule for the monthly meetings to cover those topics and more.

The February meeting is going to be our annual "Bee Night". This is our chance to introduce beekeeping to people new to beekeeping or interested in getting started. There are going to be a number of people discussing particular points about beekeeping from a beginner's point of view. We'd like to get across some background about CMBA and then let everyone know what it takes to be a beekeeper. We'll be covering what the short course is all about, some information about the equipment that is used, as well as different products that come from the hive other than the obvious honey. The whole evening is meant to be informal so questions will be encouraged throughout.

We've had a good start to the year, and it only promises to get better. Enjoy your bees!

Chalkbrood A Closer Look

By Clarence Collison

Reprinted from Bee Culture January 2009

Larvae must be under stress for this disease to become virulent.

Chalkbrood is a lethal fungal disease, caused by the pathogen *Ascosphaera apis*, which affects the brood of honey bees. Larvae ingest the fungal spores during feeding, and they germinate in the larval gut. The disease develops in the larvae after the cells have been sealed (Flores et al. 2005). Initially, the dead larvae are covered with a white fluffy growth of mycelia (the vegetative bodies of molds and other fungi, composed of hyphae) and are swollen to the size of the cell; later they dry into a hard, shrunken mummy resembling a small piece of chalk. If fruiting bodies form on the cadavers, they become dark in color (fruiting bodies are the spore-producing vesicles formed when mycelia of opposite sex (+ and - strains) come together; spores are the means by which chalkbrood is propagated). Honey bee larvae are most susceptible if they ingest spores when they are three to four days old and are under some pre-existing stress; adult bees are immune to the disease but are responsible for vectoring chalkbrood within the colony. Diagnosis of the disease in a bee colony is generally made on the basis of white, black, or gray larval mummies at the hive entrance, on the flight board, on the bottom board, and/or in unsealed and sealed brood cells (Gilliam and Lorenz 1993).

The presence of spores in the colony cannot, by itself, induce a chalkbrood outbreak. Larvae must be under either environmental or nutritional stress in order for *A. apis* to reach a state of virulence. A drop in temperature or an increase in humidity have been suggested as two predisposing conditions to the disease, and several studies have considered temperature extremes (both cold and hot) to be the primary stress factor (Mehr et al. 1976, Gilliam et al. 1978). Larvae in the fifth instar, prior to and some hours after sealing, are particularly vulnerable to these stresses that may trigger the disease (Puerta et al. 1994, Flores et al. 1996). A high spore count also appears to qualify as a stress factor (Koenig et al. 1987), for as the concentration of spores rises in the colony, the probability of a chalkbrood outbreak also increases. Spores infest food stores, both pollen and honey, and are introduced to larvae when nurse bees begin to feed some honey and pollen, about day three of larval development. Hale and Menapace (1980) found that *A. apis* can remain viable at least 12 months in bee bread (stored pollen); therefore, larvae receive a continuous exposure to fungal spores for many generations.

An investigation was made to determine if chalkbrood develops in all brood stages (Gilliam et al. 1978). Honey bee eggs; small, medium and large larvae; prepupae; pupae with no eye color and pupae with eye color were inoculated with *A. apis* spores. Larvae were inoculated with spore suspensions in distilled water by placing a drop of the mixture on either the

mouthparts or on the dorsal side of the larvae and observed for signs of growth and/or mummification. Infection occurred both through ingestion of *A. apis* and by the growth of fungus through the cuticle. Mummies were produced from larvae and prepupae in five to seven days, but eggs and pupae were not susceptible to laboratory infection with *A. apis*. The fungus did grow on larvae killed by freezing with dry ice, but these larvae did not mummify. Of the susceptible stages, medium and large larvae and prepupae, large larvae (4.5 to 5.5 days old) were the most prone to infection. The reproductive state of *A. apis* was also investigated for any relevance to virulence. Twice as many of the larvae inoculated with mated *A. apis* showed fungal growth compared to those larvae inoculated with unmated *A. apis*. Mummies were produced from both mated and unmated strains.

Tests were performed on 3rd and 5th instar larvae to determine the susceptibility of these instars to disease when environmental pressures were present versus when they were not. Third instar larvae were fed with high doses of spores (5×10^5 spores/larva) and given either a control treatment (i.e. no stress) or a cooling treatment ($22 \pm 2^\circ\text{C}$, (71.6°F) for 24 hrs.) either prior to or after brood -capping (Puerta et al. 1994). Larvae in the control group did not show signs of disease, and no spores were present in the digestive tract before pupation. Of the chilled larvae, mummification occurred in the majority of both the pre-capping and post-capping groups (59.6% and 65.5%, respectively). Chilling of older brood (spinning larvae or pupae) produced a much lower incidence of chalkbrood. When fifth instar larvae were chilled at 18°C (64.4°F), 24 hours before sealing and kept at 25°C (77°F) for six days after capping, mummification reached almost 95 percent (Flores et al. 1996). When the larvae were chilled, but the temperature after capping was held at 30°C (86°F) or 35°C (95°F), mummification reached 43.6% and 29%, respectively. When a cooling treatment was not applied, percentages of mummification after capping were lower: 77.6% at 25°C ; 15.3% at 30°C ; 2.22% at 35°C . A combined environmental stress test was also performed on 5th instar larvae. High relative humidity (87%) combined with a slightly cool 30°C temperature induced a higher percentage of mummification than a lower relative humidity (68%) combined with the same temperature: 7.75% versus 0.95%, respectively.

The persistent nature of *A. apis* within honey bee colonies was studied using a spray-inoculation technique applied over a period of four months. Beginning in August, suspensions of *A. apis* spores were prepared from sporulated chalkbrood mummies, then sprayed three times a day, triweekly, on the brood combs and bees surrounding the brood. This was done to examine the influence of a constant source of inoculum on the incidence of chalkbrood and the survival of the pathogen within the colony. For nine months afterwards, mummies were collected from dead bee traps and bottom boards and were counted in comb cells; and for seven months after, bees, brood and hive products were tested for *A. apis* via microbiological plating procedures (Gilliam 1986). Two major peaks of infection were observed. The first mummies were found one week after spray inoculations began; this seemed to be related to inoculum load and stress associated with the manipulations in setting up the test. Another major peak occurred around November 1 and appeared to be related to nutritional stress, since most colonies had little stored honey

and pollen collection was dwindling.

Susceptibility of the inoculated colonies varied from nil to high, proving some colonies have resistance, and the pathogen was shown to survive in bee colonies without causing overt disease. Five months were required after the last spray before most substrates in the colony were free of *A. apis*, although a low level of contamination persisted in bee bread, honey and the guts of larvae from capped cells. Of the 4405 mummies collected, 2871 were black due to sporulation and 1534 were white, containing only mycelia. Three pupae mummified by *A. apis* were collected in the test (Gilliam 1986) and confirm an earlier assertion that mummified pupae are occasionally found (Gilliam et al. 1983). Even though pupae do not normally support the growth of *A. apis* in the laboratory, the mummified pupae apparently became infected as prepupae and somehow were able to develop into pupae before death occurred. These mummies were smaller than normal pupae but maintained body integrity.

Colonies that show resistance to chalkbrood infection seem to express two common traits: hygienic behavior and the presence of various beneficial microbial organisms. Honey bee colonies selected and bred for resistance and susceptibility to chalkbrood disease were inoculated with *A. apis* in pollen patties (Gilliam et al. 1988). Good hygienic behavior, defined by the uncapping and removal of freeze-killed sealed brood by worker bees, was correlated with disease resistance in most of the test colonies. Resistant colonies had fewer contaminated hive substrates than susceptible colonies; e.g. most bee bread samples from susceptible colonies contained the pathogen, but few from resistant colonies did. Bee bread and the guts of nurse bees were the major sources of *A. apis* in susceptible colonies, but bee bread of resistant colonies also contained a greater number of yeasts and molds other than *A. apis*. Numerous microbes associated with honey bees, such as certain *Penicillium*, *Aspergillus* and *Bacillus* organisms, produce chemicals that inhibit the growth of *A. apis* fungal spores (Wood 1998). Microbial assays on bees, brood, bee bread and honey showed that the most inhibitory microbes against *A. apis* spores were a *Rhizopus* sp. and an unidentified *Mucorales*, both found in bee bread. These organisms may have been introduced into the hive by foraging bees (Gilliam et al. 1988).

Since some colonies have *A. apis* present without visible signs of chalkbrood disease, having an early detection technique for the fungal pathogen would be beneficial. Unmated+, unmated-, and mated strains of *Ascosphaera apis* were examined for production of 19 enzymes (Gilliam and Lorenz 1993). All strains produced alkaline phosphatase, butyrate esterase, leucine aminopeptidase, acid phosphatase, and β -glucosidase. Since valine aminopeptidase was produced by unmated but not by mated strains, it may be a useful enzyme for identification of mycelial strains of the fungus. β -Galactosidase and α -mannosidase may be candidate marker enzymes for identification of both unmated and mated strains. Few other molds associated with honey bees produce these three enzymes. Use of enzymes as taxonomic aids could simplify tests of bees and hive products for *A. apis*, particularly unmated strains.

In order to improve colony management measures for the control of chalkbrood disease, it would be useful to have a better understanding of the conditions required for the

development of this disease. Currently, development of the infection seems to be mainly dependent upon the physiological and environmental conditions of the larvae. Therefore, during periods of rapid colony development, especially in the Spring, it appears that having strong colonies with large nurse bee populations and good colony nutrition are important considerations. Selecting bees with high levels of hygienic behavior is also an important factor in chalkbrood resistance or tolerance.

References

Flores, J.M., 1. Gutierrez and R. Espejo 2005. *The role of pollen in chalkbrood disease in Apis mellifera: transmission and predisposing conditions*. Mycologia 97: 1171-1176.

Flores, J.M., J.A. Ruiz, J.M. Ruz, F. Puerta, M. Bustos, F. Padilla and F. Campano 1996. *Effect of temperature and humidity of sealed brood on chalkbrood development under controlled conditions*. Apidologie 27: 185-192.

Gilliam, M. 1986. *Infectivity and survival of the chalkbrood pathogen, Ascospaera apis, in colonies of honey bees, Apis mellifera*. Apidologie 17: 93-100.

Gilliam, M. and B.J. Lorenz 1993. *Enzymatic activity of strains of Ascospaera apis, an entomopathogenic fungus of the honey bee, Apis mellifera*. Apidologie 24: 19-23.

Gilliam, M., S. Taber III and G. V. Richardson 1983. *Hygienic behavior of honey bees in relation to chalkbrood disease*. Apidologie 14: 29-39.

Gilliam, M., S. Taber and J.B. Rose 1978. *Chalkbrood disease of honey bees, Apis mellifera L: a progress report*. Apidologie 9: 75-89.

Gilliam, M., S. Taber III, B.J. Lorenz and D.E. Prest 1988. *Factors affecting development of chalkbrood disease in colonies of honey bee, Apis mellifera, fed pollen contaminated with Ascospaera apis*. J. Invertebr. Pathol. 52: 314-325

Hale, P.J. and D.M. Menapace 1980. *Effect of time and temperature on the viability of Ascospaera apis*. J. Invertebr. Pathol. 36: 429-430.

Koenig, J.P., G.M. Boush and E.H. Erickson 1987. *Effects of spore introduction and ratio of adult bees to brood on chalkbrood disease in honeybee colonies*. J. Apic. Res. 26: 191-195.

Mehr, Z., D.M. Menapace, W. T. Wilson and R.R. Sackett 1976. *Studies on the initiation and spread of chalkbrood within an apiary*. Am. Bee J. 116: 266-268.

Puerta, F., J.M. Flores, M. Bustos, F. Padilla and F. Campano 1994. *Chalkbrood development in honeybee brood under controlled conditions*. Apidologie 25: 540-546.

Wood, M. 1998. *Microbes help bees battle chalkbrood*. Agric. Res. 46(8): 16-17.

Clarence Collison is a Professor of Entomology and Head of the Department of Entomology and Plant Pathology at Mississippi State University, Mississippi State, MS.

BEE FORAGE PLANTS

A monthly column by Arthur Gruver
abgruver@verizon.net

As we head into February with longer days and warmer (?) weather, I would like to encourage you to begin taking flower walks, or at least looking for the earliest blooms in your area. Since January has been cold, we have had no Winter Aconites (*Eranthis hyemalis*) breaking the ground yet, and we look forward to its bloom in February which is its more common time for blooming. Also during February we normally have Skunk Cabbage (*Symplocarpus foetidus*) blooming. Skunk Cabbage is a wetland plant, and in fact, is used as a wetland indicator. It generates heat and has been known to come up through a snow cover when day length is

sufficient. This plant produces abundant greenish yellow pollen which the bees gather for use in brood rearing. Snowdrops (*Galanthus nivalis*) and several early blooming varieties of Crocus (*Crocus* spp.) may also bloom at this time. Both of these ornamental small bulbs provide pollen and perhaps some nectar.

These four plants are the only ones we have noted blooming in February in our area of northern Maryland. However in reviewing Dr. Tew's fact sheet for Ohio for February, he indicates several early blooming trees, which are also growing in our CMBA area. I will list them alphabetically: Alder (*Alnus incana*) pollen source; Elm (*Ulmus Americana*) pollen; Maple (*Acer* spp.) nectar and pollen; Willow (*Salix* spp.) nectar and pollen. . As noted, these trees may be an especially early source of nectar and pollen, depending on your particular locality. . If you identify any of these blooming in February, I would appreciate hearing about them and their locations

STARTING WITH BEES

Barbara Gruver

Recently I was thinking about February, 1976, when every night for a month, after we had put our three small children to bed, my husband, Arthur and I went down to the basement of our Baltimore row house and put together bee equipment to make up ten complete bee hives. We were building 20 deep brood chambers, 30 supers, approximately 500 frames, 10 bottom boards, 10 inner covers and 10 telescoping covers. Arthur was a patient teacher in showing me how to hammer and glue.

How did we get interested in keeping bees? The interest started two years earlier when we were living in Seattle, Washington. Arthur's work was not going well. It looked as if his office might close. One night he told me, "I think I'd like to try farming. There's a bee keeping course being offered at the local high school at night; would you like to enroll with me?"

We enrolled in the 8 week course taught by Jim Bach of Seattle and all went well until the final field day when I had to go through a live bee hive. But the bees were gentle and beautiful, and I stopped being afraid and found it very fascinating.

The Seattle office did close and we moved back to Baltimore, and started dreaming about keeping bees. Since we did not have a suitable location, we contacted Larry Moore, the owner of Larriland Farm in Woodbine, Maryland and he was excited about having bees pollinate his strawberries and apples. So that is how we came up with starting with ten hives.

In February, 1976, spring was early, and on warm days when we saw insects flying, we could hardly wait to get our own bees. We contacted York Bees in Jessup, Georgia, and we made plans to drive down in our Volkswagon van to pick up the bees ourselves. A beekeeping friend, Lin Watson, asked us if we'd get three packages for him, so we placed our order to pick up 13 three pound packages of Italian honey bees in early April.

Our children were 4, 6, and 7 years old, and they were also excited about our getting bees. I told them there would be many bees in the bee yard, but not to be afraid because the bees would just think they were "mountains" and would not want to sting them. The bee yard in Jessup was boiling

with loose bees as bees were being dumped into the wooden and screen boxes.

We bought our 13 packages, put them in the back of the van, and since our car was also filled with loose bees, we spent about 30 minutes stopping and starting to get out as many bees as possible. No one got stung during the whole trip, except for me when by accident I pressed my hand against the screen of a package of bees. I kept my mouth shut!

We drove back to Baltimore without any problems. The next day we drove to Larriland Farm and set up our ten bee hives on wooden stands near a pond surrounded by willow trees. We poured our packages into each hive, put in the queen cages as instructed, and all ten hives got off to a good start! Every Saturday for the next three months, we drove out to Larriland Farm to work our bees. Our children had a wonderful time playing by the pond and willow trees. Sometimes afterwards we would pick strawberries.

In the beginning, we wrote down what we saw on each frame of each hive! I remember discovering how different each hive was, and how the end hives tended to lose bees by having them drift towards the middle hives. We learned much! Larry Moore was delighted with the increased pollination of all of his crops. All went well for all of us, until the day we came out and saw thousands of dead bees in front of every hive. Mr. Moore had decided to use the pesticide Sevin on some crops and he hadn't realized he should have alerted us first. We ended up moving the bees, but that's another story for another issue of The Hive Tool.

Do you have a bee story to tell? Send it to Barbara Gruver at abgruver@verizon.net or call her at 410-692-2051. We are looking for local material to include in The Hive Tool.

SOURCES OF PACKAGE BEES, QUEENS AND NUCS as researched January 24, 2009

1. Snyder's Apiary: Lloyd Snyder, Irsnyder@clearviewcatv.net 410-329-6671, 4747 Norrisville Road, White Hall MD 21161

As in previous years we will have 3-pound packages of bees available for purchase. The packages are made up with young high quality Italian bees. Packages received over the last 11 years, when installed on foundation and with proper care, drew out two hive bodies of wax and with a good honey flow one to three shallow supers of honey were harvested from these colonies.

The packages will be available for pickup on Saturday, April 4, 2009. A 3-pound package with an Italian queen is \$67.00 each or \$70.00 each with a Russian queen. Queens are also available for pickup the same day at \$14.50 each for Italian queens or \$16.75 each for Russian queens

Package Bee orders MUST BE PLACED by MARCH 25, 2009.

There will also be a limited number of 4 frame nucs available for pickup in May with either Italian or Russian queens. The nucs are \$95.00 each.

Open Tuesdays & Thursdays 6-9 PM & Saturdays 8AM – 1PM March 1 through May 23, 2009. For other pickup days or times give us a call to make arrangements.

2. Warren Seaver of Dover, Delaware spoke to CMBA in the fall about Pollination. His bee supply business, called S&S Group, LLC may be contacted at wwseaver@dishmail.net, 301-674-8969. He sent me the following information:

"S&S Group, LLC is taking orders for three pound packages with a marked Italian Queen and also Marked Italian Queens only for those who just want to purchase queens and do their own divides or re-queening. My wife, Joan, and I plan to leave Dover on April 6, 2009 and travel to Georgia and pick up packages and queens on April 8, returning to Dover on April 9. People who have placed orders with us will pick them up here at our facility starting late Thursday, April 9 through Saturday, April 11. Any packages not picked up by Sunday morning will be installed by me into my apiary. Those people who cannot pick them up on that schedule must make prior arrangements with me so that I can take care of their bees for them. The price for a three pound package with marked Italian Queen is \$75.00.

For a marked Italian Queen the price is \$25.00. Payments must be made to S&S Group, LLC and be mailed to 3619 Bayside Drive, Dover, DE 19901. Payments must be received by March 1, 2009 because that is when I must send the final payment to the supplier in Georgia. We will accept personal checks, money orders and of course cash. We do not have the capability to accept credit cards.

For those who prefer nucs to packages, we will work with those people on a case by case basis where I will install the packages into nucs, feed and care for them until May 1 when they will be available for pick up here. The queen will be laying and will have at least one frame of brood by that time. The price for this nuc is \$85.00."

3. Steve McDaniels mail@mcdanielphotography.com 410-239-7496, of Manchester, Maryland wrote me: "I will be providing a limited number of nucs for sale this year, four-frame nucs with a laying queen, brood, food, and bees for \$95."

4. Bjorn Apiaries www.bjornapiaries.com in Lewisberry, Pa., near 1-83, lists the following information on their website: Russian/Carniolin/SMR queens are \$20 each- available throughout the summer. Five frame nucs are \$85 if you bring a nuc box or hive. A cardboard nuc box for transporting the frames is \$8, and a solid pine nuc box (unpainted) can be purchased for \$25. You can also find out about a complete beginner's hive set-up. Contact Mike Thomas at 717-938-0444 for complete information.

Beekeeper's Daughter

By Irene J. Guertin

Reprinted from Bee Culture January 2009

A hobby is a lot like love - sometimes you actively search for it and sometimes, improbably, it finds you. In our case, it swarmed us. I grew up in rural Florida, a place people generally hurry through on their journeys across the state. Why the honey bees decided to settle in our yard is unclear, but suddenly there they were, clinging to each other in a cone formation in our live oak tree. People in our small town followed fire engines for entertainment, and in no time neighbors began gathering to stare at the large, rather menacing, quivering mass. The boys pretended to swat it with baseball bats.

Our Dad wasn't the biggest guy, and wasn't even an

arborist or bee expert, but he had a couple of things going for him: he was fearless and decisive. He quickly assessed the situation and concluded that the bee power must be harnessed and properly housed, then and there. One good thing about growing up where we did: you could find a beehive when you needed one. In no time, he procured a simple white box with frames, cut down the limb, and coaxed them in.

Dad's military experience provided the perfect training for a budding beekeeper. He must have felt a kinship to them: Identically uniformed, on a mission, falling in so perfectly and unquestioningly behind their leader. They would work themselves to death for their queen or choose to go quickly, using their one round of ammunition to protect her. There was one glaring difference. This army was all female, with a few males relegated to reproductive duties.

The bees' new home was strategically placed at the edge of our backyard, as far as possible from the house and our allergic mother. The neighbors didn't complain, probably because we didn't object to the pungent cows and pigs in their yard. The original colony was joined by others that arrived not by wing but through the mail, the workers packed in screen boxes and queens tucked into their own matchbook-size compartments.

One shipment broke open and shut down the post office for the day, but once again, Dad rounded up the wayward travelers and brought them home. Our beekeeping operation took off, and over time, hives lined the yard like a row of crooked teeth. I proudly wore at-shirt emblazoned with a giant bee, not realizing then how it contributed to my general nerdiness.

Bees get a bad rap, what with all the killer bee lore, but we learned that domesticated honey bees are quintessential good neighbors who live and let live. I would often walk among them, watching the endless frenzied takeoffs and landings in the pursuit and transport of their gold. Learning to stay calm in their presence helped me avoid a lot of stings and probably many other of life's ills.

We came to appreciate honey, that mysterious creation, its origin more complex than the most closely guarded recipe yet as simple as observing what grows nearby. The bees memorized that code deep in their DNA and worked their magic, turning pale watery nectar into dark, flowing amber. Our bees made theirs from orange and palmetto blossoms, with clover mixed in for good measure. Anyone driving through Florida's orange country in the Spring would do well to leave behind the theme parks and beaches, slow down, open the window, and take a deep breath. You will be treated to a heavenly scent too sublime and exquisite to be copied or packaged, even though many have tried; and that is a good thing.

'Robbing' the hive, as Dad called it, was a big event. He would don his pith helmet with bug screen, light the hand-held smoker, and get to work. Mom would quickly find something else to do, preferably out of the house. Sometimes Dad would forget to seal off a pant leg or sleeve and return covered with stings, yet he never blamed the bees; they were just doing their jobs. Besides, he said, it builds immunity to future stings.

We used a heated knife to slice the caps off of the frames of honeycombs, then placed the frames in the extractor. The extractor, fed by elbow grease and centrifugal force, whirled

out the honey like strands of cotton candy. A few combs were sacrificed for chewing; most were returned to the hives to be refilled by a new generation of workers or recycled into candles. At last, we poured the finished product into dozens of gallon jugs destined for market, family, and friends. Not a very efficient or large scale operation by today's standards, but successful by ours.

Our hives were occasionally destroyed by disease or their problems, their collective strength no match for the invasions. We viewed these losses as random events; after all, we could always get more bees. The recent news about the epidemic disappearance of pollinators is much more troubling. What is a flower garden, or even worse, our amazingly productive agricultural industry, without them? There's a lesson in this, about how a creature so small can make such a difference, in ways that bring meaning and sustenance to our daily lives. More and more, people are paying attention, whether by contributing to the larger cause of conservation, more locally, designing their gardens to attract pollinators or reviving beekeeping as a hobby.

Dad died long ago, the live oaks in my parents' front yard and the hives out back are gone, and I moved North. Beehives are nowhere to be seen in our tightly zoned urban neighborhood, but I still get my fix by stopping by our local nature center with my family now and then to watch its humming glass walled hive. Someday, I hope to explain to our young children what beekeeping meant to me - hard work, a disappearing craft, precious time with my father. And, to all the pollinators out there, may you not only survive but come back stronger than ever

MARYLAND STATE BEEKEEPERS MEETING

You are all invited to attend the winter meeting of MSBA (www.msbeea.org) on Saturday, February 21, 2009 from 9 a.m. to 4 p.m. at the Howard County Fairgrounds off I-70. There will be many bee supply dealers present and beekeepers from the whole state. If you are interested in joining MSBA, you can do so at the meeting. The featured speaker for the Feb. 21 MSBA meeting is Dr. Jeff Pettis, Research Leader at the Beltsville Bee Lab, on two topics. He will give us the latest information on the effort to find the cause of Colony Collapse Disorder, as well as presenting information on American Foulbrood--Harder To Get Than You Think. Other topics include a possible Honey Standard for Maryland, legislative help for beekeepers, and an auction of equipment and consultations with experienced beekeepers. We look forward to a large turnout of beekeepers for the meeting (about 200 last year).

CMBA Snow Cancellation Policy

In case of snow or ice on the meeting date, listen to WBAL radio before 7:00 PM. If Baltimore County's snow emergency plan is in effect at 6:00 PM, then the meeting is automatically canceled.

Garden Books For Beekeepers

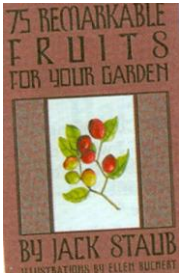
By Connie Krochmal

Reprinted from Bee Culture January 2009

Whether you're buying a book as a gift or for yourself, the following gardening titles are some of my favorites. Those with bee gardens will find these are helpful in selecting plants and maintaining their gardens.

"75 Remarkable Fruits for Your Garden"

With fruits being such wonderful sources of nectar and pollen, this fruit book will be very useful to bee gardeners. Written by Jack Staub, it has lovely watercolors by Ellen Buchert. It was published by Gibbs Smith. This hardcover is the second in a series by the author.



While some of the fruits are tender species like figs or oranges, others are perfectly winter hardy in cold areas of the country. Every type of fruit is represented from traditional tree fruits and vines to strawberries. In addition, ornamental landscape plants with edible fruits, such as the Cornelian cherry (a type of dogwood), are included.

Written in an engaging style, the in-depth fruit profiles provide the Latin and common name, descriptions, tips on growing, and recipe ideas. Readers can also learn about the rich folklore and history of each plant.

"Home Gardener's Problem Solver"

The new expanded edition of this classic Ortho title is now available. This book presents a quick and easy way for beekeepers to know what is wrong with their plants and what to do about it. Published by Meredith Books, this user-friendly guide has the symptoms and solutions for over 1500 plant problems. This covers everything from poor growing conditions and weather to animal damage. With over 600 pages, it is hard to find a more comprehensive book on the subject.

A separate section is devoted to each plant group, such as tree fruits. By using the color coded bars along the top margins of the pages, you can quickly find the appropriate section.

Each section begins with a general introduction to the most common problems for that group, such as lack of pollination. Following that are specific problems for each individual plant species. The plants are listed alphabetically by common name. This explains how to prevent and correct each problem. For quick reference, there are handy charts, including one for fruit tree diseases.

This book offers several ways to identify your plant's problem. Start with the section for that particular plant group. Or go straight to the section for that kind of problem, such as plant diseases.

The extensive index has both common and Latin plant names.

"Gardening 1-2-3"

For those new to bee gardening, this Home Depot title is essential. It covers everything from choosing plants and gardening techniques to plant care and landscaping. Featuring over a thousand color photos, this quality hardcover was published by Meredith Books. It provides all the basics in

an easy to follow style.

It walks you through the entire gardening process, beginning with how to determine your growing conditions and region. This title also includes step-by-step, illustrated gardening projects.

Readers will learn how to prepare the soil, how to transplant, propagate plants, and all aspects of plant care.

This title deals with both edible crops and ornamentals. It devotes particular attention to specialty gardens, such as wildflower gardens and native plant gardens.

With the plants arranged alphabetically by common name, the extensive plant encyclopedia takes up about half of the book. The plant profiles present everything the gardener needs to know, including a plant description, its growing needs, routine care, landscape use, recommended varieties, and a color photo.

"Organic Gardening-The Natural NO-Dig Way"

By Charles Dowding, this British title was published by Green Books. It is distributed in the U.S. by Chelsea Green. This title offers busy bee gardeners a simple and easy way to grow organic vegetables, fruits, and other edibles in raised beds. The book is based on the author's personal experience as an organic grower in Britain during the past 25 years.

Illustrated with lush color photos, this is an excellent introduction to organic gardening. This brings a refreshing tone to the subject. The author deftly avoids the hype one often associates with organic gardening. Readers can learn what to grow, when to plant, and how to care for the garden. There's also a chapter on gardening by the moon.

Much of the book is devoted to the crops with a separate chapter for each group or type. There are in depth growing instructions for each kind with charts listing the varieties, sowing times, and spacing. This even includes a section on growing fruits and nuts in containers. All measurements use the metric system. This also has recipe ideas as well.

"Baer's Agricultural Almanac and Gardener's Guide"

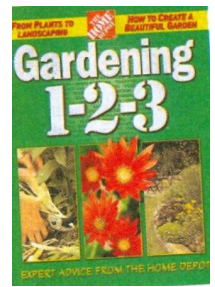
When it comes to almanacs this one can't be beat. The 2009 edition marks the 184th year this American classic has been available. Published by John Baer's Sons, both individual copies and five year subscriptions are available.

is edited by Gerald S. Lestz, and beautifully illustrated with line art and photos. From cover to cover, this is brimming with helpful charts, tables, and all kinds of gardening information. Bee gardeners will find the seed planting tables and vegetable planting charts are very useful. These tell when to plant, how much seed is needed, spacing, and so on.

Busy folks will appreciate the handy procrastinator's planting guide that lists the last planting date for various vegetables. Readers can also learn about gardening by the moon and the zodiac signs. The almanac features month-by-month gardening tips and plant lore. For each month, a chart shows the phases of the moon and location of the planets along with long range weather forecasts.

"The Encyclopedia of Hardy Plants"

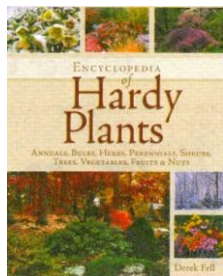
For bee gardeners in cold climates, this title by Derek Fell is invaluable. It was published by Firefly Books. It covers ornamentals, herbs, and edibles. Though the dust jacket doesn't indicate how many plants are featured, it likely covers around a thousand kinds or so.



For this book, the author chose hardy, 'iron-clad' plants that can survive severe Winters. The introduction provides everything bee gardeners need to know about plant hardiness, hardiness zones, and the factors that affect hardiness.

This encyclopedia devotes a chapter to each plant type. Among these are bulbs, herbs, perennials, shrubs, and trees. In the case of vines, each one is incorporated into its respective group, such as English ivy under shrubs.

Bee gardeners will also find helpful chapters on hardy annuals and vegetables. These can be planted in the Spring before the last frost or during the Fall months.



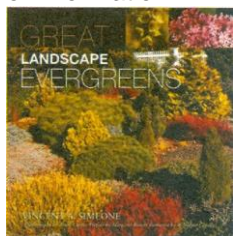
Within each chapter, the ornamental plants are arranged alphabetically by Latin name. Each plant profile contains a photo, description, propagation methods, details on plant care, the preferred growing conditions, hardiness zone, and use in the landscape. When available, specific varieties are also recommended.

In the chapter on fruits, there is detailed information on pruning and plant care. For vegetables, this gives the typical time to maturity.

This is lushly illustrated with photos by the author. There is both a common name and Latin name index.

"Great Landscape Evergreens"

By Vincent A. Simeone, this quality hardcover was released by Ball Publishing. This is part of a series, which includes "Great Flowering Landscape Shrubs." Despite the title, this book is by no means limited to evergreens. In fact, the author focuses on trees and shrubs that can be used for screens and hedges. Beekeepers who are planning such plantings around their apiaries will find this is a great source of information.



This also provides extensive details on evaluating the planting site and choosing suitable plants.

Separate chapters are devoted to conifers and broadleaf evergreens. Deciduous and semi-evergreen shrubs are combined into one chapter. Within each chapter, there is an introduction to

that particular group. The plants are arranged alphabetically by Latin name.

For each species, there is a general introduction to the genus, an in depth plant description, details on its cultural needs, suggested landscape use, hardiness zones, routine plant care, and color photos. In some cases, the author presents specific varieties or cultivars.

Beekeepers will be particularly interested in the deciduous, semievergreens, and broadleaf evergreens, many of which are nectar/pollen plants.

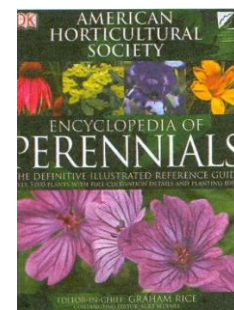
The appendix has all sorts of useful information, including a list of the top 15 screening plants, a list of mail order nurseries, and a glossary of landscape terms. The index has both common names and Latin names.

"Encyclopedia of Perennials"

Perennials are a mainstay in bee gardens. For that reason, I recommend this book for beekeepers. By the American Horticultural Society, it is by far the most comprehensive book

on the subject. This full color guide features over 5000 species and varieties, many of which are suitable for bee gardens. Released by DK Publishing, its editor-in-chief was Graham Rice.

With over 500 pages, this user friendly guide is a pleasure to use. This covers everything bee gardeners need to know in order to choose appropriate perennials for their growing conditions and care for their plants. It lists the plants alphabetically by Latin name. For quick reference, use the common name index.



This has a complete profile for each genus, species, and variety. The encyclopedia entries cover the family name, the plant's origins, its native distribution, common names, propagation methods, size in inches and centimeters, preferred growing conditions, hardiness zone, tips on routine plant care, and special problems associated with that particular plant.

Throughout the book are sidebars with additional information, such as awards that a plant has received.

Careful attention is given to hardiness. This features large color versions of the USDA hardiness zone maps as well as the American Horticultural Society's Heat Zone map.

"The Tree Care Primer"

This is part of the Brooklyn Botanic Garden All-Region Guides series. Bee gardeners will learn everything they need to know about choosing and caring for trees. This explains how to evaluate your planting site and choose appropriate species. It has tips on picking out top quality plants at nurseries and garden centers. This also explains the differences between container-grown and B & B trees.

This guide makes it so easy to choose suitable trees. A handy table lists the recommended species. This gives the name of each plant, its hardiness zone, its mature size, soil preference, and preferred exposure.

There are step-by-step, illustrated instructions on all aspects of tree planting and care. A section is also devoted to growing trees in containers.

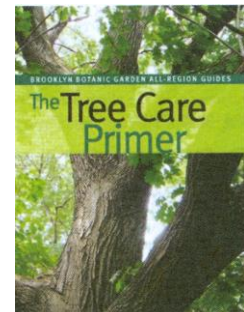
This covers preventive and routine care that is required throughout the life span of a tree from newly planted ones to mature and ailing specimens. Particular emphasis is placed on proper pruning. It also has tips on protecting trees from severe weather and other problems. In addition, this addresses legal issues regarding trees along property lines and the economic value of landscape trees.

The appendix includes all sorts of helpful information, including a tree care glossary, a directory of mail-order nurseries and tool suppliers, and a USDA hardiness zone map.

This has lush color illustrations and line art. The index gives both the common and Latin names.

With good gardening books like these, bee gardeners can determine what plants are suitable for their needs and learn how to care for them.

Connie Krochmal is an award winning garden writer and a beekeeper in Black Mountain, South Carolina.



IMPORTANT PHONE NUMBERS

David Gill-Boucher, President 410-357-9476
Jeanne Deignan-Kosmides V. Pres. 410-833-6067
Alex Flanagan, Secretary 410-472-1702
John Harmon, Treasurer 410-771-1701
Jerry Fischer, State Bee Insp. 410-562-3464
Oregon Ridge Nature Center 410-887-1815
David Papke, Past Pres. 717-246-2339
Lloyd Snyder, Editor 410-329-6671
Editors E-Mail - Irsnyder@clearviewcatv.net

Be sure to check CMBA's web site at www.cmbeea.org. Also higher resolution color graphics within articles can be viewed on website in electronic copies of the Hive Tool.

Please check the "Dues paid through" line above your name on the mailing label below. If it says "Dues paid through 2008" please fill out the included form and remit your dues for 2009.

Lloyd Snyder – Editor
4747 Norrisville Road
White Hall MD 21161

DATES TO REMEMBER

General Meeting – February 3, 2009 – at Oregon Ridge Nature Center. 7:30PM. During the January meeting we will be discussing all things beekeeping as well as putting together ideas for the coming year. Bonus points for creativity.

Board Meeting – February 16, 2009 – 7 PM at Oregon Ridge Nature Center.

MSBA Meeting - February 21, 2009 from 9AM to 4PM. at the Howard County Fairgrounds

Beekeeping Short Course – The 2009 Short Course begins on March 9 this year at 7 PM. The classes will be held in the auditorium of the Oregon Ridge Nature Center. For more information, the complete class schedule or an application go to www.cmbeea.org.