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The Journal of the Western Apicultural Society of North America

Farewell to WAS life members Tom and Maycelle Muncey

It is with sadness that we announce the deaths of long-time WAS members and representatives for the state of Nevada, Tom and Maycelle Muncey. The photo on the right was taken at the 2011 WAS conference in Hawaii just a year ago last September. When Tom didn't appear at this past conference, several commented that it was unusual. Little did we know that Maycelle had died just two weeks earlier, on the 16th of September. Tom followed her on the 5th of December. He was 83, Maycelle 82.

The Munceys were married in Marion County, Oregon in 1968 and made their home at Sparks, Nevada. A dedicated and accomplished beekeeper, Tom was a past president of the Northern Nevada Beekeepers Society. He was also the current president and many times past president of the Nevada Amateur Radio Association and a long time member of the Sierra Nevada Amateur Radio Society.

A son John and daughter Tafreda Muncey survive their parents. Both live in Bakersfield, California.

No services were held, the family decreeing that their Celebration of Life to be in the fond and loving memories of their many friends. Their ashes will be scattered in the ocean waters at Kauai in the Hawaiian Islands, one of their favorite places.

Our condolences go out to the family. They, and we, will miss them.

Western Apicultural Society of North America

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Each state/province in Western North America is entitled to elect one Director to the governing board of the Society. Directors meet before and after each annual general meeting and set policy and guidelines for the operation of the business of the Society. Throughout the year, they serve as the liaison between the Society officers and the members in their respective states/provinces. They are responsible for recruiting new members, keeping track of state/provincial concerns and advising the membership of their activities through this Journal.

Directors are appointed for a three year term. At the 2013 annual meeting, Arizona, Hawaii, New Mexico and Utah positions will come up for re-election.

Directors are currently needed for Yukon, Alberta, Idaho and Wyoming.

Please note: As a firm decision has not yet been made about the location of the 2014 conference, WAS will not have a 2nd Vice President this year.

President's Message

HAP-BEE NEW YEAR! We are now in the age of “Apiquarius” and are welcoming a fresh perspective.

"Colony Consciousness: Working Together to Preserve, Protect and Promote our Bees" is the theme of this year’s WAS-New Mexico Conference. Learning from each other to advance positive stewardship is what it is all about- and I am so very excited to be collaborating with some awesome enthusiasts to produce the most diverse and informative agenda yet! WAS is coming to the oldest and highest capitol in the country, Santa Fe: where the wild west landscape of chiseled high-altitude terrain, the railroad, and the diverse cultures of Native Americans, Colonial Spanish and Old World immigrants have come together!

New Mexico is not only rich in history and culture, but it is also the land of diversity and innovation.

October 16th-19th, WAS 2013 will convene at the world renowned historic La Fonda hotel which is located on a corner of the famous Santa Fe Plaza. Please visit their website and take the virtual tour. It is rich in architecture, design, cuisine, art and ambience and also has been designated as a world historic site. www.lafondasantafe.com .

In 2005, Santa Fe became the first U.S. city to be chosen by the United Nations Educational,

Scientific, and Cultural Organization as a Creative City, one of only nine cities in the world to hold this designation. Estan Invitados a La Tierra Encantada! You are all invited to The Land of Enchantment. As the 47th state in the union located between Colorado and Mexico and Arizona and Texas, the natural splendor, savory cuisine, and ancient cultures will navigate you on a nurturing journey into the wonders of The City Different.

Speaking of revering ancients and ancestors, or what we more politely call our elders, I would like to take a moment to recognize two supportive members of WAS whom we lost this past year, Nevada Director Tom Muncey and his wife, Maycelle Muncey. As Life members, they gave us many years on the board. They alternated as reps, one term Tom, next Maycelle and back again. Tom was also appointed Parliamentarian to the board by Eric Mussen a few years back. Certainly both the Munceys were very highly regarded within WAS and both will be dearly missed.

It is the long term participation of these two life members to WAS that remind us how the “colony”, or WAS community, and all of us in it support each other’s efforts, and can look to collaborate for developing sustainable approaches to bee stewardship for the betterment of the bees, individually as their stewards, and collectively as a community. Please consider joining us this autumn with the splendor of the aspens and cottonwoods changing colors and as the Santa Fe’s signature sunsets soothe sights and remind all of us how interconnected we are and how much is in our power for preserving, protecting and promoting our pollinators, who bring sustenance, light, and wonder to us all.

Visit WAS website http://groups.ucanr.org/WAS for additional conference information and the developing agenda.

Respectfully, Melanie Kirby, President

WAS Presidents to date

1978 Norman Gary (California)
1979 Lucien Alexander (Oregon)
1980 Randy Barker (British Columbia)
1981 Charles Duncan (California)
1982 William P. Nye (Utah)
1983 John Edwards (Washington)
1984 Eric Mussen (California)
1985 Mike Burgett (Oregon)
1986 Doug McCutcheon (Br. Columbia)
1987 Tom Muncey (Nevada)
1988 Dan Mayer (Washington
1989 Stan Williams (California)
1990 Mark Shelton (California)
1991 William P. Nye (Utah)
1992 Mike Burgett (Oregon)
1993 Mark Winston (British Columbia)
1994 James Bach (Washington)
1995 Eric Mussen (California)
1996 Russell Messing (Hawaii)
1997 Eric Mussen (California)
1998 Eric H. Erickson (Arizona)
1999 Leonard Joy (Nevada)
2000 Fletcher Miller (Alaska)
2001 Mike Burgett (Oregon)
2002 Eric Mussen (California)
2003 Jaquie Bunse (British Columbia)
2004 Jerry Bromenshenk (Montana)
2005 Steve Sheppard (Washington)
2006 Adrian Wenner (California)
2007 Diana Sammataro (Arizona)
2008 Mark Pitcher (British Columbia)
2009 Eric Mussen (California)
2010 Dewey Caron (Oregon)
2011 Antonie Botes/Jenny Bach (Hawaii)
2012 James K. Smith (Washington)
2013 Melanie Kirby (New Mexico)

Stay and play in New Mexico!

New Mexico offers prime site-seeing adventures with direct flights into both Santa Fe Municipal airport and the Albuquerque International SunPort. Being that Albuquerque is one hour south of Santa Fe, one can either shuttle, rent a car or take the NM RailRunner- the high speed train that winds through pretty spectacular scenery through Indian country, up to Santa Fe.

Albuquerque boasts the world's longest tramway which skidaddles up to the Sandia Mountains peak. NM is one of the most artistic areas in the world. Many artists come to the Land of Enchantment for inspiration. Georgia O'Keefe is one such artist who moved to Abiquiu back in the 40's; RC Gorman is another. There are many museums and galleries all located within walking distance of the hotel.

An hour and a half north of Santa Fe is Taos - one of the highest towns in our state at 9000 feet elevation. The oldest inhabited buildings in the U.S. are in Taos Pueblo, which is open to the public for viewing. On the west side of Taos is the world famous Taos Gorge Bridge over a deep gouge in the basalt rock that has been created over millennia as the water from Rocky Mountain snow melt races down from Colorado. The view from the bridge plays tricks on your eyes as you try to discern just how far down it is.

Right next to the Gorge Bridge is the EarthShip Village - a community of homes entirely composed of recycled material. These homes may sound quirky but they are indeed, intriguing works of art. They are "off-grid", utilizing solar polar, water catchment, and indoor greenhouses (did you know you can grow bananas in the winter at 9000 feet in the high desert?) Tours are available and I highly recommend it. Visit www.taosearthship.com and www.earthship.com for more info.

And for the outdoor enthusiasts, there are numerous hiking, biking, camping, horseback riding and nature trails for all levels. In town, being that the conference will be taking place right near the plaza, the famous Canyon Road art gallery walking tour is mere steps away. And right behind my alma mater of St. John's College, there are Monte Sol, Monte Luna and Attalaya summits. There's also the Windsor trail which begins at the Santa Fe ski basin and leads up to Mount Baldy (over 13000 feet) - which can boast summertime snow storms.

Within the conference agenda, field tours are being organized for Saturday. Both Zia Queenbee Co. (Mark Spitzig and myself) and For The Love of the Bees (Les Crowder and Heather Harrell) are located on The High Road to Taos and visitors will have the opportunity to see our high mountain survivor queen breeding farmette and Les' magnificent top bar and pollinator garden. The road up to us leads through some stellar scenery and may also make some stops at neighboring winery tasting rooms!

Additional tours include one specifically for urban beekeepers (or for those who prefer the city) through both Santa Fe and Albuquerque. These cities each have several hundred practicing beekeepers utilizing a variety of hive design styles and locations. The Albuquerque Open Space has a bee program and we are working to include them in the tour as well as they are helping to develop a beekeeping certification program for New Mexico.

No lack of things to do and of course, the WAS agenda will be the highlight of it all! More info in the coming issues! To begin your tour of NM - please visit www.newmexico.org.

Oregon Master Beekeeper Program

Carolyn Breece,
Oregon State University

The Oregon Master Beekeeper program is a long-term, in-depth educational program for beekeepers of all levels of experience. After 2 years of planning and consulting with the Washington State Master Beekeeper program, the Oregon Master Beekeeper program officially began in January 2012. Similar to the Washington Master Beekeeper program, there are 3 successive levels: Apprentice, Journey, and Master. The beginning level, Apprentice Beekeeper, emphasizes hands-on training. We match each Apprentice student with a mentor in their area. The student and mentor work together at the hive to complete 4 field experience checklists, which include tasks such as identifying the queen, supering for honey production, and managing varroa mites. The Apprentice must also earn education points, keep a log of hive management activity for one year, and pass an open-book exam. We hoped for 50 students enrolling at the Apprentice Beekeeper level for our first year. Instead, we enrolled 140 students and had about 30 more on our waiting list. As of November 2012, we have 33 Certified Apprentice Beekeepers. Most students will apply for certification in spring 2013, when they have one year's worth of log entries and all field experience checklists have been completed.

In January 2013, we will launch the intermediate level: the Journey Beekeeper level. This level incorporates advanced training in honey bees and beekeeping as well as a community service component, similar to that of Washington Master Beekeeper. Journey Beekeepers must earn education points, service points, submit responses to Directed Study questions, pass a written exam, pass a practical exam (which includes a hive inspection), and keep a log for a minimum of 3 years. The Journey Beekeeper also needs to own a hive at this point.

More information about the Oregon Master Beekeeper program may be found on our website: www.oregonmasterbeekeeper.org Interested individuals may apply for the Apprentice Beekeeper level online. Apprentice and Journey students can use the website to record points earned and manage their progress online.

We are grateful for the support and advice from the Washington State Master Beekeeper Program and we are thrilled to hear of new Master Beekeeper programs popping up around the west. The recent, dramatic increase in beekeeping makes educational programs necessary for the health and maintenance of honey bee colonies.

2012 Germplasm importation of the Italian honey bee

Walter S. Sheppard,
Thurber Professor of Apiculture

Recent declines in honey bee populations and increasing challenges to maintain colony health are of concern to both beekeepers and growers of crops needing pollination services. Amid widespread research on honey bee health issues, there remains a notable lack of research directed toward the genetic improvement of honey bees.

There is a strong queen production industry in the US, but queen producers rely primarily on populations of bees established during a major period of importation between 1860 and 1922 (when the Honey Bee Act restricted importation of bees). While importation of honey bee germplasm effectively ceased after 1922, feral European honey bee populations in some southern states served as supplementary sources of genetic variation for breeding operations. However, the arrival of parasitic Varroa mites in the US in 1987 led to a major decline in US feral honey bee populations. The genetic effect of "bottlenecks" associated with importation and parasite-driven population losses includes a reduction in the amount of honey bee genetic diversity available to queen breeders.

In 2012 we (BKH, SWC, WSS) traveled to Italy and made significant collections of A. m. ligustica semen from a number of apiaries in the central Piedmont and the Reggio-Emilia (Bologna) area. Honey bees of this subspecies constitute the basis of current US "Italian" honey bees, the most widely used honey bee strain for managed pollination and honey production in the US. Interestingly, the Bologna region represents the original Italian source location for the initial US importations of honey bees from Italy made in 1860.

Semen from all sample locations was collected for both fresh use and cryopreservation and returned to the US under a USDA-APHIS hand carry permit. Collaborating California queen producers had pre-shipped virgin queens from US domestic stocks to Pullman, WA and these were inseminated with imported fresh honey bee semen. Aliquots of this semen were concurrently supplied to Dr. Judy Chen of the USDA-ARS Bee Research Laboratory in Beltsville MD for virus determination.

The objectives of our ongoing program to assist beekeepers to develop improved honey bees include:

- Continue collection of germplasm from endemic populations of European honey bees
- Cryopreservation of representative samples of all collected honey bee germplasm for long term breeding use.
- A selective breeding program to evaluate and improve introduced stocks and hybrids under US conditions, screening for resistance to pests and diseases
- Develop a Industry/University partnership to disseminate imported honey bee germplasm and assist in the evaluation and maintenance of desirable breeding stocks

The collection and re-introduction of genetic material from source populations of honey bee subspecies provides significant additional genetic resources for US bee breeders. Maintaining adequate genetic diversity in breeding stocks of bees is highly important as queen breeders strive to select for disease and parasite resistance in bee stocks and to reduce reliance on chemotherapeutic agents.

MS Word documents won't open?

Have you received either documents or emails with attachments, that contained MS Word files with "name.docx" at the end? Was your version of Microsoft Word too old to open the document? If so, there is a fix that is much less expensive than purchasing a new version of Microsoft Office.

Microsoft itself has published a free "Office Compatibility Pack" that you can download and use to change the "bunch of zipped XML documents" back into the file type that can be read by your version of MS Office.

Here is the URL to that compatibility pack: http://www.microsoft.com/en-us/download/details.aspx?id=3.

If you already have been forced to put Winzip, or a similar program, on your computer to open "zipped" files, that program will open the "name.docx" documents, as well.


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In order to get the longest life out of *Varroa* control products, rotation is essential. Mite resistance can develop in a short period of time and that is why it is key to rotate your control materials with products like Apistan®. Rotating on an annual or semi-annual basis with products that have different modes of action will help manage mite resistance. Start your rotation program with Apistan®.
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Germplasm preservation at W.S.U

Brandon Hopkins

Washington State University has been importing germplasm from Old World honey bee populations since 2008. The semen collected in and brought into the US using a special permit from APHIS was only viable for about two weeks following collection. The short time frame in which to utilize the semen meant that only one generation could be produced from each trip abroad.

On a collection trip to the Caucasus Mountains in the Republic of Georgia in 2011 we were able to cryopreserve semen (germplasm) of the subspecies Apis mellifera caucasica and maintain those samples in liquid nitrogen. The trip was the first time honey bee semen had been cryopreserved and transported into the US for long-term storage. On the same trip we imported fresh semen and used it to inseminate virgin queens at WSU. Those queens were overwintered in our apiary and in summer 2012 we grafted from one of the top performing instrumentally inseminated queens. The virgins produced from the grafting were inseminated with cryopreserved and subsequently thawed semen from the previous year's trip. Queens containing the cryopreserved semen were then grafted to produce the next generation of queens. Virgins produced from those grafts were then open mated in our isolated A. m. caucasica apiary. We plan to select from those queens and perform further backcrosses to caucasian semen still in the liquid nitrogen tank.

This work has demonstrated one of the useful aspects of cryopreservation in apiculture. The ability to perform sequential backcrosses using cryopreserved semen has great conservation implications. The useful aspects of cryopreservation in apiculture as they pertain to the commercial honey bee industry have yet to be realized. Cryopreservation of semen can provide commercial queen breeders with the ability to breed through time and space, allow for progeny testing of specific queens, and allow for greater exchange of "top tier" genetics from around the world.

Genetic diversity in Old and New World honeybee populations

Megan A. Taylor and
Walter S. Sheppard

Honey bees are essential to sustain U.S. agriculture, contributing an estimated $14.6 billion in pollination services annually. However, honey bees are not native to North America and only a small subset of the subspecies within Apis mellifera were introduced into the United States.

The importation and founder events associated with the establishment of the honey bee in North America, represent a series of genetic bottlenecks that limited the genetic diversity of North American honey bee populations. These bottlenecks include: the limited size of initial founding populations, parasitic mite diminution of U.S. honey bee populations (managed and feral), and ongoing production of queens from managed beehives from an exceedingly small number of queen mothers. Additionally, the U.S. Honey Bee Act of 1922 virtually eliminated further importation of additional honey bee adults and germplasm into the United States.

Recent research has shown that honey bee health is directly correlated to genetic diversity. More genetically diverse colonies have lower disease intensity, increased disease resistance and greater forager productivity.

I propose a comprehensive analysis of genetic diversity of Old and New World honey bee populations and an evaluation of genetic diversity in California commercial queen breeding operations that have been supplemented with recent germplasm releases. Based on the genetic bottleneck events sustained by New World honey bee populations, I hypothesize that populations of the Old World will be more genetically diverse than those in the New World and could represent a source of additional and sustainable genetic diversity for future U.S. honey bee breeding efforts.

Update on HopGuard for controlling varroa mites

Gloria DeGrandi-Hoffman, Fabiana Ahumada, Gene Probasco and Lloyd Schantz

There are many products available to control Varroa mites. One of the newer products is HopGuard. HopGuard was developed at the USDA-ARS Carl Hayden Bee Research Center in Tucson, AZ under a Cooperative Research and Development Agreement with J.I. Haas Inc. The active ingredient in HopGuard is beta plant acids that are byproducts of hop processing for the brewing industry. Previous studies testing HopGuard in mite infested colonies indicated that the product killed phoretic mites for about 7-10 days after application. With this in mind, we applied HopGuard to colonies under different sets of conditions to determine the effects on mite population levels. We assessed the effects using alcohol washes with adult bees before and after treatment.

The first tests we conducted were applications of HopGuard strips in package bees. We inserted 2, 3, and 4 half strips of HopGuard (i.e., 4 strips in the package = 2 full strips in a colony) in 2 and 3 lb packages. With 2 strips, more than 90% of the mites in the package were killed. Mortality increased to more than 95% when 3 or 4 strips were used. The results indicate that colonies can be established with few if any mites when HopGuard is used in the packages.

The second set of studies was to test the effects of HopGuard treatments to control mites throughout the year. We established 25 colonies from packages with the following treatments: package treatment only; package and June treatments; package and June, August and September treatments; package, August and September treatments; and no treatments. We found that mite levels in colonies treated in packages and then in the fall were not different from those with an additional treatment in June. By October, mite levels in colonies either treated in the package or in June were similar to those that did not receive any treatments. We ended the study by treating the colonies in January. Mite levels in the colonies were significantly lower in all instances after the single HopGuard treatment in January.

The next set of studies evaluated HopGuard treatments throughout the year beginning with treatments in January. Colonies had few mites at the time of treatment and we did not detect a significant treatment effect following the HopGuard application. In August though, mite levels were lower in colonies previously treated in January compared with hives that did not receive any treatment.

The final study we conducted tested the effects of HopGuard on mite populations in colonies made from splits. There is a window of time when colonies are split where there is little or no capped brood. Since HopGuard kills only phoretic mites, it is most effective when there is no sealed brood in the colony. In splits made with open brood and a virgin queen, the broodless period is about 21 days after the split is made. If a mated queen is introduced, the time when there is the lowest amount of sealed brood is about 14 days after making the split. We treated a set of colonies 21 days after they were split in April. The splits had a queen cell inserted after the split was established. Mite levels after treatment were significantly lower than in pre-treatment counts. In September, mite counts in the treated splits colonies were lower than in those that were not treated. In a second set of colonies established from splits in July, we treated 14 days after the colonies were established because a mated queen was introduced. Mite numbers after treatment were significantly lower than in pre-treatment counts. Follow up measurements will be made in November to determine if mite numbers differ between treated and untreated colonies.

There are several conclusions that we can draw from the studies we conducted. HopGuard can effectively reduce mite populations in package bees. If HopGuard strips are not included in the package, beekeepers should put them in the newly established colony within 9 days (i.e., prior to the first appearance of sealed brood) to eliminate the mites that were present in the package. Even with package treatments, we detected mites in the colonies when we sampled in June. A single HopGuard treatment in the summer does not reduce mite numbers to levels that differ from colonies that are not treated. Single treatments in August and October reduce mite populations, but whether mite numbers can be reduced further by two additional treatments is under investigation. HopGuard also effectively reduces mite populations in colonies made from splits. An unexpected observation in all of the studies conducted in colonies was how quickly mite populations increased throughout the year. Though mite numbers were very low in March or June, by the fall the numbers were high enough to need further miticide treatment. The observations suggest that the mite reproductive rates might be higher than previously reported and thus cause mite populations to increase at greater rates than expected.

Commercial beekeeping: booms and busts; indoor wintering trials

Eric Olson, Yakima WA
From notes by Jim Bach

Eric was quite revealing about his experiences with bee colony losses since 2010 and his emotional reaction to them.

In 2010 he lost 49% of his colonies, made splits to get his number of colonies back up; lost 59% in 2011, again made splits; and then lost 8.9% in 2012! That is a total loss of 9,000 colonies of 16,500 colonies at his peak count!

Eric described the impact of these losses on him and Sue as the company owners/managers. He said the impact was psychological, financial and even affected his physical health. Eric revealed that in 2011 he projected an income of $1,570,200, realized a net income of only $871,100 and experienced a loss of $699,100.

As a result of this experience he decided to invest in trying some indoor wintering with some of his colonies in a controlled atmosphere (CA) room in the Yakima area to see if and how the colonies would survive, what their honey usage would be, what losses he might have, and how the colony strength might look in the spring. The colonies were each fed two rounds of pollen supplement and syrup prior to being moved into the CA room.

Eric referred us to an article published in 1997 by Karel Van Nerum & Herman Buelens in Comparative Biochemistry and Physiology, Vol. 117A, No.4 pp. 445-455. The article discusses research in Belgium with indoor wintering of bee colonies. The data suggests that oxygen levels vary in a colony with different colony temperatures and colony movement in the over wintering hive, sometimes going down to 15% from 20%.

The controlled atmosphere room containing his hives was kept at 40°F. Bees maintain a 5-6% CO2 but can lower that to between .5 – 3%, with oxygen at 15-20%. When the heat in the room went up the bees bearded at the front hive entrances. The room was opened so the temperature could drop, adjustments were made and the room closed again. Eric noted that the bees from the wintering room were broodless when he took them to California in time for almond pollination. This suggests that the bees went through a winter diapause while in the CA room. The bees were in the CA room from November 24th to the following January 14 = 51 days. He reports that the bees used very little honey during that period.

In 2011 Eric said his colony losses in the CA room were only 8%. He took one load of bees out of the storage and placed them in the Wenas Valley from Nov. 23 to Dec. 24 when he shipped them to California. That load of bees equaled the colony size of those taken to California in Oct./Nov.

He likes to use HopGuard (beta acids) in colonies for Varroa control in the spring when the colonies are smallest with the least brood.

Eric donated $20,000 to WSU to conduct the over wintering study and an Idaho beekeeper also participated. The WSDA Apiary Advisory Committee voted to add funds to the research project with $30,000 from the WA beekeeper hive registration fund. Small room studies will be done at WSU with small groups of colonies to further determine essential atmospheric conditions for indoor wintering.

2013 WAS membership renewals are due. Please see page 31 for the renewal form. Rates on page 30.

Controlled atmosphere overwintering

Jason A. Long,
Washington State University

Overwintering honey bee colonies is a common practice, with both outdoor wintering and indoor wintering conducted. Colonies heading into winter produce special winter bees. Winter bees, compared to summer bees, have enlarged fat bodies and pharyngeal glands, high levels of protein, and low levels of juvenile hormone. Winter bees live for 100 plus days, compared to 20 to 40 for summer bees. Overwintering bees cluster together as temperature drops and control temperature within the cluster via endothermic heat production by shivering of wing muscles and by increasing density of the cluster to better hold in heat.

Indoor wintering provides an ability to control environmental temperature, limiting the fluctuations seen in outdoor wintering, reducing food consumption, and protecting hives from weather and animals. Indoor wintering has the drawback of not allowing bees cleansing flights on warmer days, reduces brood reared and requires active ventilation.

Over the winter of 2011-2012 , Washington beekeeper Eric Olson wintered his bees indoors in Yakima, WA and high carbon dioxide levels were observed. This led to a literature search and discovery of prior research by Karel Van Nerum and Herman Buelens on metabolic rates and oxygen/carbon dioxide levels in wintering hives. They found that internal oxygen levels in clusters naturally decreased to levels as low as 15%, and carbon dioxide levels went as high as 6%. As the ambient oxygen approached the 15% level, there was reduced metabolic activity within the cluster.

In my research, I will compare two commercial indoor wintering setups (Eric Olson in Yakima, Washington and Tom Hamilton in Nampa, Idaho) with outdoor control colonies located at their sites. In Pullman, Washington I will conduct controlled atmosphere testing, and compare varying levels of oxygen and carbon dioxide against normal background atmospheric levels. I anticipate that my research will provide insight into improved methods for indoor wintering that may increase survivability and reduce food consumption in wintering bees.

New Books

Keeping the Swarm: New and Selected Essays

Are you, or do you know a beekeeper history buff? Here is a beautiful reminiscence you can't help but enjoy!

The book's title essay and other pieces -- including a eulogy -- feature one of the Pacific Northwest's first migratory beekeepers, George L. Mayo from Alder, Washington (1894-1980) and author George Venn's grandfather.

From the gorgeous cover photo by California beekeeper-photographer (and WAS member) Kodua Galieti to the very personal family photos and gentle boyhood remembrances, Venn paints a picture of beekeeping and family forever intertwined.

The very first essay describes Grandpa Mayo's very special gift to his two young grandsons. You can smell the paint and feel the smooth wood and cold metal as the mystery of this most out-of-character event is revealed. Grandpa Mayo made history that day, and it is now recorded for posterity as a bit of background to the life of a man who made far more history than he knew.

Mayo sold his bees about 1962 to Ernie Buchholz, a beekeeper in Snohomish, WA and son-in-law of Howard Graff, owner of Silverbow Honey. George worked for both Ernie and Silverbow during the summers.

Among the essays are also poems, including "Down the Colfax Grade", based on George's memory of moving bees into yards set in massive fields of yellow sweetclover in the Palouse region around Colfax, Washington in the late 1950s, and "Sleeping Upstairs", about the security he felt with his grandparents after his father died.

Keeping the Swarm: New & Selected Essays by George Venn. Paperback, ISBN: 978-1-877655-76-0, 224 pages (6" x 9"), 20 photos. $15.95 + $3.50 shipping & handling. Order from Wordcraft of Oregon LLC, PO Box 3235, La Grande OR 97850. For more information, email info@wordcraftoforegon.com.

Skagit Valley queen rearing project

Bill Markus

Tim Bueler, the WSBA area 1 rep in NW Washington, had a dream in the spring of 2006. He wanted to create a queen rearing apiary at Washington State University Experimental Station near Mount Vernon, Washington. His goal was to set up 20 hives with the 4 clubs in his district maintaining the hives, raising queens, and having field days.

Tim got the project started with $2,800 and a right-of-access agreement with WSU. In May 2006, 20 packages were installed and in June of that year, WSU project queens from Dr. Steve Sheppard were introduced.

Over time, Skagit Valley Beekeepers became the only club involved in the project and they were able to receive further funding from Skagit Farmers Supply, Land O Lakes, Hulbert Farms, and Washington State Beekeepers Association. The seed money the Buelers had provided was returned and the project was off and running.

Field days and queen rearing classes were set up by the club and hives were maintained. In the spring of 2011, Sue Cobey was brought on staff by WSU. Hive numbers were increased to over 50 and various crosses were introduced and studied using drone semen collected from old world genetics in Europe by Sue and Dr. Sheppard.

Queen rearing classes are occurring, Skagit Valley beekeepers are staying involved and supplying time, equipment, bees, feed, and forage. Many are becoming skilled at raising their own quality queens. The project is alive and well and the hope of a better quality bee for the Pacific Northwest is closer to being realized.

NEW PAm Board Chairman

On December 27th, Dan Cummings stepped down from his role as PAm Board Chairman. Dan co-founded the non-profit organization in 2006 as a 'new vision' to direct research to enhance the health of honeybees while improving crop production. Under Dan's leadership PAm has experienced tremendous growth and has had a direct impact on the beekeeping industry. In 6 short years, under Dan's guidance, PAm had 41 board meetings, undertook 37 projects and funded research studies totaling $661,203.

Dan was also instrumental in obtaining $1,043,024 in grant funding as well as $655,000 in corporate funding. He will remain on the PAm board and continue to lend his expertise and support. Thank you, Dan, for your leadership the past 6 years.

Dr. Gordon Wardell was voted in as the new Project Apis m. Board Chairman. Gordy is a bee biologist for Paramount Farming and President of the South Valley Bee Club. A beekeeper, himself, he has served as a PAm Scientific Advisor and has authored numerous scientific publications on honeybees. Dr. Wardell is very qualified to lead PAm into the future and to continue the vision of Project Apis m. Congratulations Gordy.

Dan Cummings

Gordy Wardell

Beekeeping in New Mexico

Melanie Kirby

New Mexico beekeepers saw a better year than last but drought conditions were still persistent in the central and southern counties. Decent monsoon rains in the northern region were pervasive and wildfire threat was at a minimum. Honey harvests depended on area but reports are positive.

Report from Les Crowder- New Mexico Beekeepers Association President:

"The New Mexico Beekeepers Association has been encouraging beekeeping in our state since well before World War II. We have had a good mix of commercial and backyard beekeepers, men and women, and beekeepers from our many cultures. The association holds an annual meeting, these days on the last weekend in January, and teaching events, movie screenings, and honey tastings throughout the season.

We have sought and procured state legislation to enable us to sell un-pasteurized honey, and have met with city and county officials to prevent the banning of beekeeping. We are proud of our website and intend to encourage beekeeping in New Mexico for many more decades." Visit www.nmbeekeepers.org.

Northern region -

Santa Fe area: SDC Beekeepers meet monthly with free presentations by area top bar and Langstroth enthusiasts. SDC has worked with the city of Santa Fe to continue to allow "backyard" beekeeping within city limits as well as shared information at local Master Gardener and pollinator events. Unfortunately, high reports of lots of problems with small nucs/packages not building enough comb in town. www.sdcbeeks.org

High Mountains: Good moisture from spring snow melt and summer monsoon rains brought decent honey flow to the area. Wildfire threat was at a minimum and bear threats at a low as well (possibly due to last year's die-offs from drought stricken ranges).

Central region- Middle Rio Grande/Albuquerque area -

Area conditions were wetter than last season but still dry overall. Honey flow seems to be hit and miss with good conditions in the east mountains. Jessie Brown, Albuquerque Beekeepers Co-Chair shares, "The Albuquerque Beekeepers is a social group with more than 500 members that holds monthly meetings attended by around 100 people. Those numbers always amaze us! Our main focus is education and community.

In the spring, we connect old timer mentors with newby mentees so those new to beekeeping have someone that they

can rely on for the first critical years. We have a yearly survey that helps find common themes so we can better our hive management techniques. Our webpage is an asset to our group. It is set up like a social network so the members provide the content. It is also a great place to ask questions, post events, share your highs and lows and meet with beekeepers in the same area of town. We look forward to meeting you all in New Mexico next year!"

A recent art installation incorporating technology and nature featured Jessie's top bar hives for an intimate acoustic experience at the ISEA conference. Chantal Forster, ABQ Beeks Co-Chair, will be "retiring" from club coordination as she is focusing on working with the NMDA/NMSU Extension and the City of Albuquerque instituting a New Mexico Master Beekeepers Certification Course. For more info on Albuquerque and Central NM beekeeping, visit www.abqbeeks.ning.com.

Southern region -

High Mountain ranges: Rob Sheplar, initiated the Southern NM Beekeepers group forum on the NMBKA website. An area club is in formation. Good moisture brought average foraging conditions. Bees built up and made honey.

Las Cruces/Mesilla Valley area: Long time commercial beekeepers Gerry and Pancho Garcia report that the drought has continued to affect their honey production. Recuperation from last year's drought losses is still a priority. If the drought conditions continue, southern NM beekeeping may see needs for altered management.

ANNOUNCEMENT: Les Crowder, long-time NM beekeeper and renowned top bar enthusiast and teacher, has had his Natural Top Bar Beekeeping book published with Chelsea Green Publishing. His long-awaited book is available via his website, www.fortheloveofbees.com . Les has been keeping bees in NM for over 30 years. He has served as the NM Dept. of Agriculture's state bee inspector and is currently the NM Beekeepers Association President.

News from the WAS regional reps

BRITISH COLUMBIA

Ian Farber

In the interior of BC, winter is finally here with low temperatures and more snow than we have seen over the past few years. Fortunately, the bees know how to survive the cold and snow.

Buy local is a popular phrase these days. Some grocery store chains are featuring locally produced honey in special store displays. Publicity is good and the public is certainly being informed of local honey. The BC Government recently announced that they would be providing funds for "buy local grants" as long as the grants were matched by the industry or organization. Our BC Honey Producers' Association is investigating accessing these funds to support Day of the Honey Bee celebrations.

A recently televised news report focused on the Vancouver Airport Fairmont Hotel's apiary crop this year. With bees close to the runways the honey yield was an amazing 5500 pounds. Fairmont Hotel honey is sold at the Airport gift shop and is used in specialty foods at the hotel, which has also partnered with Whistler Brewing to produce a unique honey beer. This is great publicity for our industry. The Fairmont Hotel chain has made beekeeping a focus over the last 5-6 years.

In BC, treatments for Varroa include Apivar and formic acid with a growing number of beekeepers trying to avoid chemical treatments altogether. As BC is an area of mainly hobbyist beekeepers this can be practical on a small scale.

Local beekeeping regulations are slowly changing in many areas to allow urban beekeeping on a small scale, under specific conditions. This is a result of increasing public interest in honey bees and the public's recognition of the value and importance of honey bees to food production. Bee club membership continues to increase in many cities.

SASKATCHEWAN

Alvey Halbgewachs

In Saskatchewan the 2011-2012 winter was very mild and the bees were off to an excellent start in the spring. Build up went very well, however, the fields of flowers were slow to bloom resulting in an average crop of 23M lbs of honey. Spring losses were only 17%; the number of hives in the Province has increased from 90,000 to 125,000 and the number of commercial beekeepers is 110. Due to the mild winter hive losses were low and NUCS put into winter were not purchased, therefore, beekeepers increased their overall hive numbers. It was a very dry fall in 2012 with very little bloom for pollen build-up for the winter. Treating for varroa and preparing the hives for winter was cut short with an early snowfall that continued into winter.

In October, the Saskatchewan Beekeepers' Development Commission entered an "Ag in the Classroom" event at Prairieland Park in Saskatoon to introduce beekeeping to students at a grade 4 – 6 level. In November the Regina and District Bee Club (for the 26th year) entered an education booth for students at Canadian Western Agribition and a trade show booth to promote the industry and sell hive products.

Beekeepers are looking forward to the 2013 hoping it will be another productive year including activities in the areas of: a strategic plan for the Saskatchewan Beekeepers' Association, monitoring the small hive beetle, Mortality Insurance for Saskatchewan beekeepers, continued research in many areas including the varroa mite applications, honey bee management product issues and pesticide incident reports to name a few. There has been record snowfall this winter which should help reduce any moisture issues in the spring.

Happy beekeeping in 2013.

ALASKA

Joe Carson

Hello from Alaska,

The winter has been brutal so far with temperatures in Western Interior reaching -55 F. Northern Interior has been as cold whereas the South Central area around Anchorage has reached the -10 F range. At the time of this writing, Anchorage is enjoying +40 F. weather which is great for us two legged critters but the huge fluctuations in temperature along with the huge spike in humidity will be rough on the wintering bees. Many areas of Alaska other than the Anchorage and surrounding areas have received 2 to 3 feet of snow to date which is good insulation for the bees. My prediction for wintering success is for average to good for colder areas and poor to terrible for South Central areas including Anchorage and the Matanuska Valley (Wasilla, Palmer, etc.). We had over 12 1/2 feet of snow last year but this year with the low pressure systems and flash warm temperatures which melted most of the snow in the Anchorage area, bees will be severely stressed and little to zero snow insulation for the hives in the field.

The Alaska Beekeepers Association has merged with the South Central Alaska Beekeepers Assoc. from the Anchorage/Valley area as the ABA membership was down to 2 to 3 folks since the passing of former president Fletcher Miller. The only state wide organization representing beekeepers now is the Alaska Beekeeping Federation. They can be reached at 907-727-8200.

Stay warm!

CALIFORNIA

Archie Mitchell

As I prepared this report the American Honey Producers Association, "an Organization of Beekeepers for Beekeepers" was meeting in San Diego for their 44th Annual Convention and Trade Show at the San Diego Sheraton Hotel and Marina. Ms. Karen Ross, Secretary of the California Department of Food and Agriculture, is the keynote speaker. Her presentation has to be of interest especially to small scale and hobby beekeepers who will be taking advantage of AB 1616 (Home Produced Foods). This new law which became effective on January 1, 2013, makes it legal to bottle and sell honey from your home kitchen. However, you cannot use the kitchen for any other purpose during the bottling and the County Health Department can inspect the kitchen. Other requirements under AB 1616 for honey packed in a residential kitchen include labeling the honey as "packaged at home" It should also be noted that if the beekeeper does more than $50,000 in annual honey business, a commercial kitchen is required for this scale of operation. Here is the internet link for the new bill: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120AB1616

Treatment free beekeepers are asked to contact Randy Oliver through his website: ww.scientificbeekeeping.com to track and report actual mite levels in your hives over the course of one year. Randy plans to make the data available on his website to anyone interested in this information. Here are brief reports starting with one small scale beekeeper in Goleta, CA (Antonio) who reported about a third of his bees lost so far. Antonio noted also that there are small hive beetles in his Apiaries in areas including Ellwood and other sites near Santa Barbara. He explained that these pests have been a problem for several years and attribute the small hive beetles in this area to the large-scale commercial beekeepers that winter their bees along the coast in preparation for almond pollination. Antonio Diloreto (805) 896-4804 may be contacted through his website, www.http://artisanbees.com/

Here is a short report from Jeremy Rose and the California Bee Company: "My bees have had a higher than usual winter mortality. 20% loss rather than 10% as usual. There is finally fresh pollen coming into the hives during warm weather, so hopefully the bees will start to brood up. I will start moving bees to almonds on February 5th. We still have not had sufficient rainfall to make a good spring honey crop, but there is still potential for enough rain in the coming months."

Central Coast beekeepers may enroll in Jeremy's "hands-on" beekeeping classes offered at UCSB's Sedgwick Ranch from April through June. He will be offering hives for sale in spring including new queens from his apiary. Contact Jeremy through his website to enroll in his classes or to purchase 4 frame nucs for $95 or $90 ea for 2 or more; Single (New box, lid, bottom, feeder, and frames with a 4-frame nuc installed) $175 ea or $165 ea for 2 or more. Here is his website: californiabeecompany.com

This Director will also be offering Introduction to Beekeeping Classes at Allan Hancock College, starting February 23 and ending March 16 for four consecutive Saturday mornings from 0900 - 1200. This is a non-credit Community Education Class. On-line enrollment site: www.hancockcollege.edu; the course number for this class is CRN 41672.

A short history of beekeeping in **COLORADO**

Miles McGaughey

Western expansion in Colorado was spurred by claims of gold being found in the Rockies. After many men had pulled up stakes in the east to try their hand at gold mining, many discovered the claims of easy riches were greatly exaggerated and came back down to closely inspect some of the flatlands they had crossed on their initial adventure. Those with grit and tenacity started to unearth the real riches that would provision them and their families - farming.

After poor results with many crops these farmers realized what was missing from their operations - pollinators. So in the year 1862 Mr. Issack Mcbroom brought one colony of bees to Colorado, the first recorded in the state. By 1875 the Kansas Pacific Railroad brought in an entire carload of beehives.

An Early Organizer Reuban T. Coffin

In 1845, 45 year old Jacob Coffin, with his pregnant wife Mary Ann and their 8 children, ages 2 to 15, left their upstate New York home and relatives, and made their way through the Erie Canal and across land and lakes to settle in Boone County in northern Illinois. This pioneering spirit evidently made its way into the hearts of Jacob's children, for as they grew into adulthood, several of them uprooted from Illinois to the wild lands of Colorado. Those who moved to Colorado were Jacob's sons Morse, Reuben, and George, and daughters Ellen and Emma. They settled in the St. Vrain valley near the line between Boulder and Weld counties, near what would later become the city of Longmont, Colorado.

Reuban Coffin would turn out to be one of the major beekeepers of the era. In 1891 he founded honey days in Longmont Colorado, which later became known as pumpkin pie days and is still celebrated in Longmont annually. He formed the Northern Colorado Beekeepers Association in Longmont in 1892 and was the first president. In 1902 he called together The National Beekeepers Convention. The convention was a "big deal" and included many meetings and side train trips to neighboring bee areas. This convention was headquartered in the Brown Palace Hotel in Denver, a hotel with a long and illustrious history in the Colorado story. (Many famous people and presidents have stayed at the Brown Palace and it currently is sheltering bees!) This gathering was so successful that it may have been the founding inspiration for the National Western Stock show a few years later.

Many small operations came and went over the years and the beekeeping associations came and went with them. In 1912 after many colony deaths due to foul brood a rigorous inspection service found that of the thousands of hives inspected over 10% were found to have foul brood. With vigilance and hard work these inspectors began to get a handle on the foul brood problem and were observant of other problems to bees that needed to be addressed. In 1975 the bee inspector Lynn Teets of Boulder contacted area beekeepers to form the Boulder County Beekeepers Association to stem the tide of miss use of insecticides (Pen Cap M and later Furadan and then again Pen Cap) Area beekeepers including Herold Zerbinsky, Margy McGinty, and Tom Theobald were at that first meeting along with others. Tom Theobald would take over duties of bee inspections as Mr. Teets retired. Tom Theobald was the last Bee Inspector. Much of his work was unfunded and he did the inspections at personal cost. Tom was also president of the Boulder County Beekeepers Association for over 30 years.

Boulder County Beekeepers are still in the fight to save bees as witnessed by the recent meeting of the Boulder County Commissioners, which was attended by all of the current and past presidents of the Boulder County Beekeepers Association, to stop the inclusion of genetically modified plants on public lands.

Colorado Honey Crop - 1892 honey crop 1,760,000 Pounds at 11 cents a pound
1900 colony count 100,000 hives: 2012 colony count approximately 24,000

HAWAII, after the storm

Jenny Bach

Aloha from Hawaii. Another year has passed and beekeepers on the Island of Hawaii are recovering from what we call the "Hawaiian Punch", a term for the dramatic losses we experienced in the last few years.

In 2011, beekeepers reported on average a 50% loss due to the arrival of the varroa mite and small hive beetle. Our tropical paradise allows both the pest (varroa & small hive beetle) to thrive year-round.

Well, enough of the past...let's focus on the present! It is a new year, right? The winds are changing here in Hawai'i as many beekeepers are reporting that their colonies are recovering and building. Swarms are being spotted all over the Island. Even new beekeepers are making successful splits.

So what was the change from dramatic losses to recovery in just one year? Part of it is due to our enduring beekeepers. The challenges made beekeepers use different techniques and find ways to "clean-up" their operations. Luckily, we have the information to learn from some of the mistakes of the past. Many beekeepers are choosing to use organic treatments as well as alternate treatments so there is less of chance of resistance.

And then there are the beekeepers who leave it up to the bees to display positive traits in the ever-changing climate of pest pressure. Some of our young beekeepers are focusing on techniques that encourage survivor stock breeding programs as well as "treatment free" beekeeping. Regardless of your personal opinion on "treatment free" techniques .... it's working for some beekeepers. The diversity of keeping bees is what makes it interesting. We are lucky here in Hawaii to have an array of different approaches. Personally, I'm excited to see the young beekeepers become more inventive.

And we can't forget the recovery is also a result of our resilient honeybee, because we experienced the arrival of two pests within a few years of each other, which has resulted in a tremendous decline of domestic and feral colonies. We see and understand pest pressures are cyclical. But something the bees have here is an abundance of good resources. Besides the plentiful nectar flows we also have some really good and open-minded beekeepers.

Currently the Big Island Beekeepers Association and the Honeybee Education Program is working on a program to bring out-of state beekeepers to Hawaii to provide training workshops. These workshops are geared to offer beekeepers training in a number of categories to improve Hawai'is beekeeping industry.

MONTANA

Jerry Bromenshenk

I just returned from American Honey Producers in San Diego to 14 degrees and snow in Missoula. I sent Colin Henderson to Hershey, PA; let him be the one to go from snow state to snow state. Last year was a tough one for beekeepers in our part of the US. Only a couple of our beekeepers made a normal honey crop. In Missoula, we tied the historical record for continuous days of no precipitation. Much of Montana and nearby states like the Dakotas experienced dry to extremely dry conditions. Many beekeepers were lucky to sustain their bees and make a bit of honey; some found pockets of moisture, valley systems that yielded a crop. The winter before bee colonies tended to have mites at levels that were higher and more widely distributed than normal. Our package bees from California arrived loaded with Nosema. I started hearing about colonies that failed to grow and some failing colonies in the mid-part of the US as early as late July. Recent reports from California are that while many of the truckloads of bees for almonds look great, there are scattered reports of loads of bees in bad shape or even collapsing.

A year ago, the MT Beekeepers asked if we could address the rapidly growing numbers of new and small scale beekeepers in Montana. They were glad to see new beekeepers, but they were concerned about a lack of educational programs for them. Bee clubs have suddenly popped up in many of our towns. Since we have not previously had many small scale beekeepers in Montana, there were no existing clubs. We launched a Masters Beekeeping series through the University of Montana's School for Extended and Life-Long Learning. We offer classes for certificate or credit through the University. Initial response was much higher than expected. People traveled from as far away as Idaho to take the classes. This winter, we are going to work with SELL to develop an on-line version, since our state is so large. The biggest challenge will be providing the hands on experience that we can offer at UM. I've also gotten requests from Idaho and Utah for access to our on-line courses; which we will be more than glad to provide.

In addition, we again had a good turn-out for the MOLLI Grandparents and Kids two-day bee course in Missoula. The rules are rather loose. Grandparent equals anyone over 50; kid is someone in K-12. Most kids are from first grade

through middle school. It's a great pairing. On day one, we go over bee biology, using a glass hive, and we all build beehives. I cover where and how to get the necessary equipment. The small children especially like climbing into a completed hive and having the lid put in place, so they experience the environment of a beehive. By day two, everyone is ready to look into real hives, and hold frames of bees and honey. We end the day by extracting honey from one of our hives and giving everyone a bottle to take home.

There were lots of presentations at both National Meetings. One given at the American Bee Research Conference in Hershey that reportedly was very good was made by Reed Johnson. He did a controlled study to evaluate role of Pristine fungicide with respect to losses reported in queen breeding operations. Basically, he showed the problem is not Pristine, but a new practice of applying diflubenzuron to almonds during bloom, often tank-mixed with Pristine. A few years ago, I investigated a problem with bees refusing to pollinate a seed crop in California. We also found the basic problem to likely be the mixture of chemicals in a tank mix.

Finally, we presented data on clothianidin levels in corn tassel pollen and bee-collected pollen near corn fields from 53 fields in Illinois, Indiana, and Nebraska; as well as bee-collected pollen and nectar from 30 canola fields in Canada. The Nebraska and Lethbridge fields were sampled at the beginning, middle, and the end of the bloom period. Average clothianidin in bee-collected pollen near corn was 1.2 ppb, in bee-collected pollen near canola, 1.7 ppb; and 0.8 ppb in nectar from canola. The instrument limit of detection is about 1 ppb. Not surprisingly, bees collected lots of canola pollen, but usually collected relatively little or no corn pollen. We plan to publish an extensive article on the results from over 300 samples.

We also presented information about the Acoustic Scanner for bee pest and diseases that we are beta testing in 2013. I'll have more about that to report in the next WAS issue.

NEVADA

Michael Hamerski

Since we have just lost our long time reps from Nevada, Tom Muncey and his wife Maycelle, this report was kindly sent by Michael, a small scale beekeeper in Fallon regarding the status of honeybees in the Great State of Nevada.

The weather has been very cold and the frigid conditions have been hard on the bees. They are not making as many cleansing flights as expected and the beekeepers in the Fallon and Reno areas are experiencing higher than normal losses, averaging 1/4 of their colonies.

OREGON

Dewey M. Caron

Oregon beekeepers held their Annual meeting Nov 1-3 following the WAS meeting. Speakers included commercial beekeepers Dave Hackenberg, Pat Heikam, George Hanson, and Clint Walker, USDA researcher Frank Eischen (who came from Weslaco but has since been reassigned to Tucson), Jim Tew and Larry Connor from the mid-west, Sue Cobey, Morris Ostrofsky and bee students and faculty from WSU and OSU.

The first "graduates" of the Apprentice level of the new OR MB program, fashioned after the Washington MB, received their certificates. A new certification, Journey level, was unveiled at the meeting. The apprentice program includes a mentoring program for one year; Journey level beekeepers will need three years of experience and need to pass a written and practical exam as well as demonstrate they can find relevant and reliable information on topics of bee colony stewardship.

Ramesh and I continued, into the 27th year, a survey of pollination economics for PNW beekeepers. The weighted average was 5% lower than the previous year. Rental price for almond rentals, which as you read this, the location of over 2/3 rds of the NASS estimated 60,000 OR colonies, was up slightly from the previous year. Ramesh and I will distribute a PNW winter loss survey in March to compliment the BeeInformed Loss/management survey.

Colonies in OR seem to be in poorer shape following seed pollination. There are fewer locations for colony "time out" to recover from rentals during the season. Backyarders in Eugene and Junction City are awaiting what hopefully will not be highly restrictive ordinances for keeping bees in those two communities. Short courses are fully subscribed in Eugene, Salem and elsewhere. Regional meetings are attracting a good number of members. In late July, a PNW treatment-free/earth-friendly bee conference will be held in the Portland area and the southern Or and northern CA beekeepers are planning to feature a meeting event Randy Oliver with the same theme this summer. A new group Cascadia Queen Breeders has been formed to develop and produce locally adapted queens in the region.

UTAH

Skip Jones

Utah Beekeepers are glad for the rain and snow we have had this fall and winter. The honey production was down and also the number of hives surviving were down.

We are looking forward to our Utah State Bee Convention scheduled for march. We have not received the dates and meeting plans at this time.

WASHINGTON

Jim Bach

Some WA reports say that colony losses haven't materialized much yet. It's early in the winter and more results will be noted in January when beekeepers work their colonies in California for almond pollination. Several persons are reporting "excellent bees" but these are incomplete reports because of various industry concerns, reasons and issues. Others are reporting: "Really good bees; not so good; some 50% losses because mite controls weren't used on time; poor bees in OR; and some really bad bees because of possible mite losses." We may get more complete reports in February/March after the bees are placed in almond orchards. Reports are highly variable.

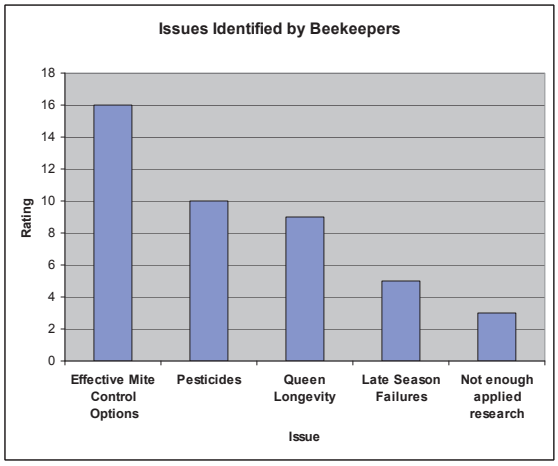
Locally the Central WA Beekeepers Assn. has conducted its year-end elections and we now have two presidents: Cliff Peterson & Stephen Stokesberry; each received the same number of votes. We've had our first Executive Board meeting and are developing plans for activities in 2013. These include having two educational discussions at our monthly meetings, one for beginner beekeepers and one for those with more experience. These will be followed by a short business meeting as need requires followed by a networking activity giving our members the time to consult those with more apicultural experience to get their questions answered. Some local folks are reporting small honey crops in 2012, but no indication as to cause(s).

Pres. Stephen and I will be developing a "bee management plan" for inclusion in our CWBA annual activity calendar. The plan will cover what needs to be done with bees next month and include a vision of what will be important two and three months from now. It is important for beekeepers to be thinking three to six months down line in their management so they are timely in meeting colony needs and issues. The plan may be posted on our website for beekeepers to use.

What beekeepers want to know

Compiled by Paul Kozak, Ontario Provincial Apiarist, Canada

The following is an abbreviated list of issues identified by the State Apiarists from feedback received by beekeepers in their respective states over the past year. These are the issues that beekeepers are requesting be addressed by primary and applied research and extension services.



Additional feedback –

Effective Mite Control Options: Beekeepers throughout the United States do not feel that there is an adequate suite of options for effective varroa control. Furthermore, there is a lack of regional and seasonal efficacy data on many of the registered products. The gaps identified in varroa control include: the development of resistance in registered products, not registered products with unique modes of action, lack of efficacy and insufficient data on best use of varroa control products.

Pesticides: There were a numerous issues raised related to pesticides, specifically insecticides used by growers. Chronic and sub-lethal toxicities are areas of concern, specifically as related to neonicotinoid insecticides. There are also concerns that the LD50's and established safety thresholds for registered agrochemical needs to be reviewed and revised.

Beekeepers are increasing concerned with the exposure that repeated pesticide exposure may have on the long term health of their colonies. The application of pesticide treatments on corn seed and the exposure to honey bee colonies through dust drift is a major concern to beekeepers in several of the Mid-west states. Contamination of the pollen stores and long term damage to honey bee colonies is another concern amongst beekeepers.

Queen Longevity: Queen longevity, viability and atypical queen mortality is still an issue highlighted by beekeepers throughout the USA. Beekeepers are interested in the underlying factors influencing queen survival, particularly environmental factors and pest and disease pressures. Furthermore, beekeepers are looking for management solutions to maintain queen health.

Late Season Failures: Late season failures or death of colonies is still a reality for many beekeepers, in some cases there are very serious levels of mortality in beekeeping operations leading into winter. Colony Collapse Disorder (CCD) and the continuing trends of extremely high levels of winter loss experienced by beekeepers is still an area of concern.

Not enough applied research: Although beekeepers are recognize the importance of primary research there is a feeling that there is not enough applied research to address the immediate challenges of modern apiculture (effective varroa management, pesticides, etc.). Furthermore, many beekeepers are finding that the relevance of many of the primary research topics are not communicated clearly to beekeepers.

Other current and emerging issues highlighted by beekeepers to State Apiarists:

- ☐ Impact and control of Nosema
- ☐ Small hive beetle biology and management
- ☐ The potential impact of the phorid fly (Apocephalus borealis) on honey bee populations
- ☐ More extension and management options for small scale beekeepers
- ☐ Nutrition requirements of honey bee colonies and effective management options
- ☐ Effective management and risk mitigation of human / bees interactions with urban beekeeping

Research in Canada – a quick snapshot of research topics (Canadian Association of Professional Apiculturists):

- ☐ Screening the efficacy of new and current miticides under different seasons and regions
- ☐ Immunity of honey bees in relation to varroa infestations
- ☐ In field hygienic breeding programs for Ontario beekeepers
- ☐ Viability and quality of local honey bee queens
- ☐ Nutritional management of honey bee colonies for blueberry/cranberry pollination
- ☐ RNAi technology to control virus infections in honey bee colonies
- ☐ New molecular tools for selection of honey bee stock
- ☐ Molecular tools for identifying Africanized genes in honey bees
- ☐ New methodology for identifying damage to honey bees by neonicotinoid insecticides
- ☐ The biology of small hive beetle at northern latitudes

UBC bee research update

By Dr. Leonard Foster

Happy New Year everyone! We are approaching the 2/3 mark of our project to try to breed for hygienic behaviour using the molecular markers we have developed. Last year we successfully completed two generations of bee breeding in the two sites, Langley and Grand Forks. The breeding populations at each site are split in two and for the two halves we select based on either the normal tests for hygienic behaviour or using the diagnostic tests based on protein markers. To facilitate the fall activities, we moved the colonies from Grand Forks to Osoyoos to take advantage of the more favourable weather in the Okanagan. Before preparing the second-generation colonies for winter, Heather Higo and Liz Huxter's teams tested them for hygienic ability, and a group from UBC collected samples for the diagnostic tests. We are now analyzing the samples and data to select the parents for the final breeding in the spring. This third and final generation will be evaluated by our collaborator producers in BC, AB and MB.

We have also transferred F1 queens to Alberta and Manitoba where Steve Pernal and Rob Currie's teams have characterized American Foulbrood resistance and Varroa-sensitive hygiene (VSH) behavior, and compared the first generation to bees that came from the same pool originally but that have not been selected for in any way. The initial analysis of these data indicates significant gains in the selected populations.

Finally, to understand the mechanisms of hygienic behaviour and VSH, we continue to analyze the protein data from colonies with different hygienic abilities. Our initial results showed that both the affected larvae and the nurse bees play a role in the differences observed, and that proteins of innate immunity and olfaction (smell) provide a link between larval stress and adult recognition.

A peculiar genetic property allows social behaviour in insects

Bees, along with ants and termites, have a more highly developed social structure than humans, as you all know. I believe that this fact, that something else is more advanced than humans, is what has made the push to understand how social behaviour evolved as one of the hot areas of biology. Gene Robinson, in Illinois, has been the leader in this area for many years but a relatively new Canadian scientist, who originally trained with Robinson, is making some waves in this area. Amro Zayed, from York University in Toronto, recently published a paper (Kent et al. (2012) Proc. Natl. Acad. Sci. U.S.A. 2012, 109: 18012-18017) where they looked at some unique properties of the genomes of social insects. Recall that 'genome' refers to all the DNA that makes up all the genes within a living thing. Like humans, queens and workers receive one copy of DNA from each of their parents and thus only pass on one copy of their DNA to their own children. That copy is not simply one of the original pieces of DNA received from their parents, however. Some mixing occurs to create a mosaic so that each copy of DNA that a child receives is a mixture of the DNA from the child's grandparents. This mixing process is called 'recombination' and is the basis of Amro's study. The bee genome is recombined at a phenomenally high rate compared to most other organisms, at least ten times faster than human recombination for instance, and certain areas of the bee genome recombine faster than others. Amro's group found, among other things, that the sites in the bee genome where recombination is most frequent also harbour the sites where mutations in the DNA occur most frequently. In this case 'mutations' is meant in its evolutionary sense, rather than its potentially negative health sense: mutations are critical prerequisites to evolution of new traits. What was particularly intriguing about Amro's data was that these sites of high mutation/high recombination tended to be in areas where genes involved in social behaviour are found. The implications of this are profound: it suggests that the peculiar recombination in social insects allows their species' to test many more potential traits in order to find those most advantageous. In other words, they can evolve more quickly and efficiently, with the result being higher orders of social structure.

June 22: Colorado State Beekeepers Summer meeting, Silt. Info Beth Conrey 970-213-3099 or coconrey4@msn.com.

July 26 - 28: Pacific Northwest Treatment-Free Beekeeping Conference - Where Science and Earth-Friendly Beekeeping Meet! A community gathering for beekeepers of all experiences, Pacific University, Forest Grove, just outside of Portland, OR. Featuring Dr. Tom Seeley, Kirk Webster, and other great mentors! Special bee-themed concert by musician Timothy Sellers. Info at www.blisshoneybees.org/events.html.

Aug 5 - 9: Eastern Apicultural Society Annual Conference & Beekeeper Courses 2013, West Chester, Pennsylvania. Info EAS2013-L@lists.psu.edu.

Sept 29 - Oct 4: XXXXIII International Apimondia Congress, Kyiv, Ukraine. Registration form and information at http://apimondia2013.com.ua/registration.

Oct 16 - 20: Western Apicultural Society Annual Conference 2013, La Fonda on the Plaza Hotel, Santa Fe, New Mexico. Watch the WAS Journal and website (http://groups.ucar.org/WAS) for details as they become available. Hotel site at www.lafondas-antafe.com.

For more Beekeepers' Calendar of Events items, visit the Global Beekeeping Calendar, courtesy of the Florida Beekeepers Association & Malcolm Sanford at http://www.my.calendars.net/bee_culture

Bayer's North American Bee Care Center breaks ground

Bayer will break ground in February on a new, state-of-the-art center that will support honey bees through research and collaboration.

Before Christmas, Bayer CropScience announced plans to break ground on its new North American Bee Care Center, which will serve as a gathering place for researchers, bee experts, students and others to meet regularly with leading Bayer scientists. The Bayer Bee Care Center is dedicated to promoting and protecting bee health so that these hard-working, beneficial insects can continue to provide hive products as well as pollination services for foods we enjoy.

The North American Bayer Bee Care Center, to be located at the Bayer CropScience North America headquarters in Research Triangle Park, North Carolina, is scheduled for completion in July 2013 (summer). The Center is part of Bayer's Global Bee Care Program, which provides a more focused and centralized resource for Bayer scientists and external stakeholders. The Center will bring together significant technological, scientific and academic resources, with the ultimate goal of supporting product stewardship and sustainable agriculture.

"We understand the necessity for healthy bees as pollinators and their critical role to agriculture, and by working with scientists, growers, beekeepers and customers, we strive to create new approaches and solutions to benefit bee health and the global food supply," said Jim Blome, president and CEO of Bayer CropScience North America. "Because we are aware of the challenge to continue feeding a growing world population, our Bee Care Center will be a vital resource in our ongoing commitment to maintaining sustainable agriculture."

The North American Bee Care Center will include a full laboratory and research apiary, as well as honey extraction and workshop space needed to conduct bee health research and to support a practical apiculture. The research will focus on Integrated Pest Management for the multiple causes affecting bee health, such as parasites - like the Varroa mite - predators, diseases, seasonal management and environmental stressors.

Bayer will actively promote bee-responsible use of our products along with communication activities worldwide. The Center will also provide state-of-the art meeting, training and presentation facilities for beekeepers, farmers and educators to provide resources and an interactive learning center.

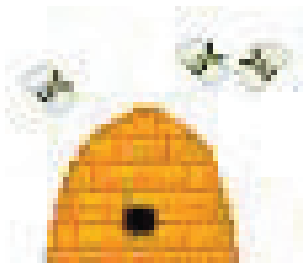
Bayer's new North American Bee Care Center is the second established by the company to promote bee health. In 2012, its global Bayer Bee Care Center was established at the joint headquarters campus of Bayer CropScience and Bayer Animal Health in Monheim, Germany.

The Center, a more than 6,600 square feet building in Research Triangle Park, will be fully staffed, including office space for graduate students. Not only will the Center be LEED (Leadership in Energy and Environmental Design) Gold certified, providing pollinator-friendly gardens, but it will also produce a surplus of energy. As a LEED-certified building, the Center will continue Bayer's efforts to reduce its carbon footprint to help improve agricultural management and foster environmental stewardship. The net zero building will generate more energy each year than consumed through its geothermal heating and cooling, LED lighting and solar water heating.

For more than 25 years, Bayer has been actively involved in finding solutions to improve honey bee health, and the two new Centers confirm how its commitment furthers collaboration and understanding of the health of bees.

Bayer professes its dedication to crop protection and commitment to environmental stewardship and sustainable agricultural practices, including the protection of beneficial insects such as honey bees.

For additional information and background on other sustainability initiatives please visit http://www.bayercropscience.us/our-commitment/bayer-initiatives



ARE you ...

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By Dewey Caron

WAS beekeepers know that keeping bees healthy and productive is a complicated endeavor. There is no "one right way" to keep bees. Keeping colonies alive is not always about what beekeepers do - where the bee colonies are located and the resources they can collect and store are critically important. Beekeepers actively caring for their bees know that timing of manipulations and how skillfully colonies are managed can make a difference.

The Bee Informed Partnership (BIP), a 5 year effort funded by U.S. Department of Agriculture/National Institute of Food and Agriculture (USDA/NIFA), is using an epidemiological approach to identify risk factors associated with bee colony losses. BIP seeks to identify key factors that contribute to bee disease occurrence to determine why some beekeepers are losing fewer colonies than others. One major tool includes the annual BIP losses/management survey. We seek to find those correlations that indicate potential factors in poor bee heath to recommend hypothesis-driven research to understand cause and effect.

Your input is needed. BIP is beekeepers "talking" to beekeepers. Information includes a national survey – now including survey responses of nearly 6000 participants with 95% small scalers.

Asking beekeepers about losses and their management has revealed that while annual losses are at unsustainable levels (over 30% of colonies entering the winter period are not surviving until spring - last winter overwinter losses were reduced at 22%), 25% of beekeepers have losses under 15%. On the other hand 25% of beekeepers lose over 50% of their colonies during the wintering period. Beekeepers who use upper entrances, insulation under the lid and who seek to equalize colony strength lose on average 10% fewer colonies than those who do not do those fall managements. Beekeepers who do some mite control lose fewer colonies than those not seeking to control mites.

Past survey results are posted on line at Bee Informed.org. If you have not participated in our loss and/or management survey, I encourage you to do so. It will take less than 15 minutes to share your overwintering success/failures and management actions with the rest of the beekeeping world. The online survey is only available for 2 weeks in early April. If you visit Beeinformed.org in the next couple of weeks to see what others are doing about mites/diseases and colony stewardship, you can sign up to receive a reminder of the 2013 survey. Bee informed. Sign up now!

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Introducing the National Pollinator Defense Fund

NPDF is a new legal defense organization conceived by the American Honey Producers Association (AHPA). The NPDF provides support to beekeepers and pollinators by ensuring enforcement of pesticide laws and regulations and providing guidance and tools to defend pollinators. The NPDF also provides legal support to beekeepers in select cases.

Learn more at www.pollinatordefense.org
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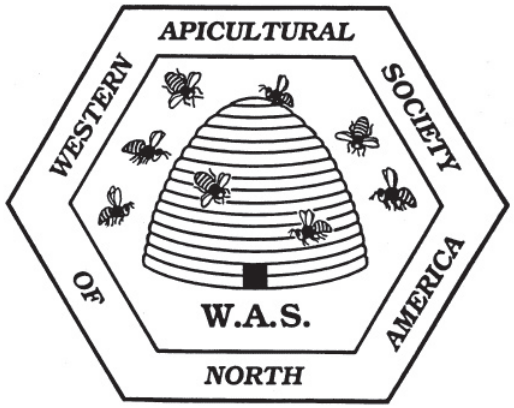

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