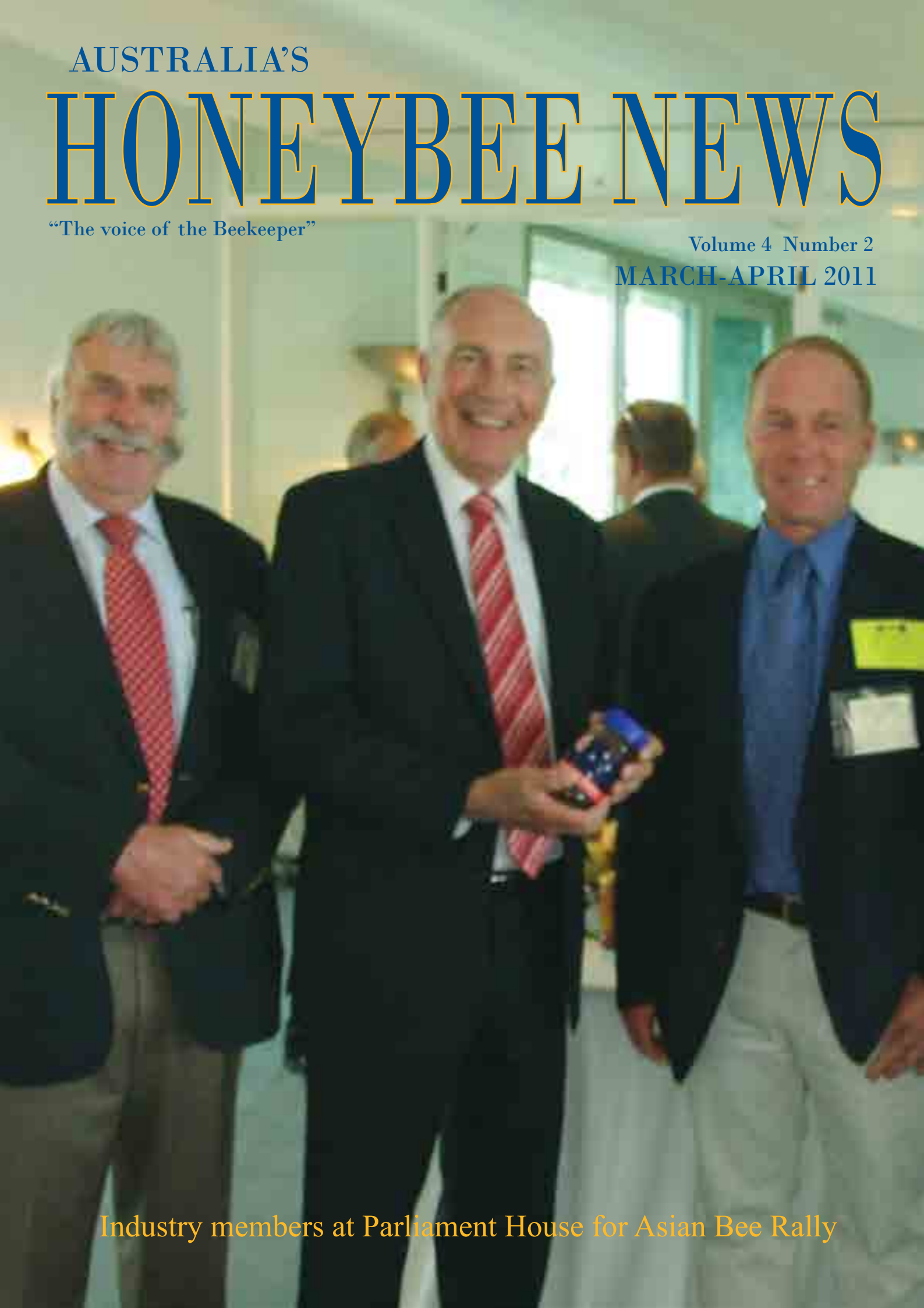
AUSTRALIA'S

HONEYBEE NEWS

"The voice of the Beekeeper"

Volume 4 Number 2
MARCH-APRIL 2011



Industry members at Parliament House for Asian Bee Rally

2011 STATE CONFERENCE

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CONFERENCE REGISTRATION

Included in this edition is a Conference Pre-registration Form
Early Bird Special : $125.00 for Members - $135.00 for non-members
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PLEASE RETURN TO:
SECRETARY JULIE LOCKHART NO LATER THAN 10 MAY 2011

AUSTRALIA'S HONEYBEE NEWS

The Journal of the NSW Apiarists' Association Inc. (NSWAA)

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PRESIDENT'S REPORT

Season
The season is drawing to a close in most regions of NSW with most beekeepers getting a reasonable crop albeit many would be down by up to 30%.

The prospects vary from not great prospects in the South until after winter, to a few prospects in late autumn and winter in the North. (Caleys Ironbark, Bluetop Ironbark and Yapunyah).

Prices
Prices are being suppressed at present by processors competing for Supermarket labels. Most processors (packers) have sufficient stocks for next few months, however, July - September could see a tightening of supply.

World prices are holding firm or slightly increasing. The strong Australian $ is not allowing for profitable exports at present. This could change during the next few months with scarcer supplies and increased world prices. The longer term will see the extremely low prices of many third world countries production disappear, as their standards of living improve and costs of production increase. Countries like Argentina and China will not like to sell commodities cheaply.

Apis cerana **(Asian Bee)**
As many of you are aware following the Asian bee being declared endemic on 1 February a protest rally was quickly organised and held on 3 March at Parliament House in Canberra. The rally has had the effect of prompting a Senate Inquiry into the science behind the decision to declare the Asian bee endemic.

An enormous amount of work has been going on and many submissions have been sent on behalf of the Honeybee industry over the past few weeks with a lot of support from members of Parliament other than Government. It was encouraging to see so many beekeepers (and their trucks) travel to Canberra. On behalf of the Association I would like to thank all who took part.

An agreement was reached by DAFF on 31 March to recall the Consultative Committee on Emergency Plant Pests (CCEPP) (which is where the beekeeping industry biosecurity is now dealt with) to review the scientific evidence regarding whether the Asian bee can be eradicated. It is assumed that another vote will be taken. This is welcomed by our industry.

It was also heartening to hear that Queensland has decided to continue the work by the staff currently employed on the eradication program till 30 June 2011.

Sydney Show
The Show is now upon us commencing on 14 April through to 27 April. There is still room on the volunteer roster for anyone who feels they can assist at *Honeyland*, their assistance would be most welcome, and they would help themselves by keeping membership costs down.

Please contact the Secretary on nswaa@optusnet.com.au or (02) 9863 4338 or any member of the State Executive if you are able to help out.

Conference
Plans are well underway for the 2011Annual State Conference to be held 19 & 20 May in Dubbo. An Agenda and Registration Form are included in this edition. Please consider pre-registering by 10 May as it cuts down on the waiting time on the first day of Conference and also helps with administration beforehand.

You will see by the Agenda that we have lined up some very knowledgeable speakers so come along and join in. All positions on the Executive will be up for re-election so this is your opportunity to become involved and work for the betterment of your industry.

The Trade Show will again run for the two days of Conference and entrance is included in the registration fee. Many companies have already reserved their spot they include: Beechworth Honey, Dalrymple View Pty Ltd, Ecroyd Beekeeping Supplies, Ensystex, Hydes Creek Woodworks, Industry and Investment & Saxvik Honey and Saxees's Sap.

Following the Conference the Western Plains Branch will host a field day on Saturday 21 May 2011.

Bill Weiss
State President

NEW MEMBERS

A warm welcome to the following new members:

Keith Bell	Wahroonga
Warren Clendenning	Holt ACT
Graeme Collins	Medowie
Sylvia Cornwell	Buxton
Allen French	Telegraph Point
Tony Gordge	Bangor
Neil Gow	Batemans Bay
Clive Hardwick	Lochiel
Jean Henning	Tennyson Point
Matthew Hodson	Galong
Andrew Jenkins	Castlecrag
Steven Lanograf	Dubbo
John Morphett	Maianbar
John & Barbara Murray	Tamworth
Peter Reeckman	Tarcutta
Anthony Spalding	Mt Colah
Les Thomson	Byrrill Creek
Philip Thompson	Kenthurst
John Watson	Mt Warning
Losi Wilkinson	Coonabarabran
Andrew Wright	Cootamundra

SYMPATHY

We were saddened to hear of the death of Nora Perkins a long time member of the Sydney Branch.

We would like to offer our sincere condolences to her husband Bob.

MARCUS OLDHAM

Each year the Association sponsors a member to attend the Marcus Oldham Rural Leadership Program.

The five Day workshop is held at the college campus in Geelong, commencing on the last Sunday in June each year.

If there is a member who would like to apply to attend the Leadership Program this year, or would like further information could you please contact Julie Lockhart on 02 9863 4338 or email the NSW Executive at nswaa@optusnet.com.au

FORESTS NSW SOUTHERN REGION

VACANT APIARY SITES

Notification of vacant apiary sites within Forests NSW Southern Region

APPLICATIONS CLOSE ON 10 MAY 2011

Application Conditions:
Applications must state that the applicant is a registered beekeeper.

- Applications must state if the application is for all sites or for individual sites (e.g. site 1 and site 2 but not sites 3 - 7).
- If there is more than one interested applicant per site, the Association will conduct a ballot.
- If the selected applicants do not pay at least one year's rental for the offered apiary sites within one month of notification, the site will be offered to the next applicant on a reserve list that will be compiled during the ballot.

Vacant Site Information

Site	Range ID	Map Sheet	Forest Name	Approximate Location
1	Scbby18.28	Currowan	Currowan	5km West of River Road
2	Scbby19.28	Currowan	Currowan	5km West of River Road
3	Scbby19.29	Currowan	Shallow Crossing	5km West of River Road
4	Scbby21.36	Brooman	Yadboro	4km NWW of Clyde Ridge Road
5	Scbby22.35	Brooman	Clyde	1.5km NW of Clyde Ridge Road
6	Scbby22.30	Currowan	Shallow Crossing	2.3km West of River Road
7	Scbby22.31	Currowan	Shallow Crossing	2.3km West of River Road

For any further information on these sites please contact:
Steve Dwight
Land Administration Officer
PO Box 42 Batemans Bay NSW 2536
Email: Stephen.dwight@sf.nsw.gov.au
Phone: 02 4475 1415

Applications can only be made in writing to:
The Secretary
NSW Apiarists' Association Inc.
PO Box 3018 Toongabbie East NSW 2146
Fax: 02 9863 4338
Email: nswaa@optusnet.com.au

Applications must clearly indicate the sites the application is for and provide contact details for notification if the application is successful.

DOUG'S COLUMN

Doug Somerville
Technical Specialist, Honeybees - Industry & Investment NSW - Goulburn
doug.somerville@industry.nsw.gov.au

ASIAN BEES

Introduction
Asian bees (*Apis cerana*) are not native to Australia and are not regarded as economically viable for honey production when compared to European honey bees (*Apis mellifera*). *Apis cerana* is considered as the most significant pest and competitor for resources of managed honey bees in Asia, according to Dr. Denis Anderson, CSIRO (*pers. com*).

It is possible to keep Asian bees in moveable frame hives similar to honey bees. But when compared to honey bees, Asian bees have an extremely high propensity to swarm and the average honey harvest is extremely poor.

Asian bee colonies have been reported to produce 6 to 10 swarms in a year, compared to honey bees with an average less than one swarm per year. Honey crops from Asian bee colonies are frequently reported to range from a few kilograms (kg) to 10kg. Exceptionally large honey crops may equate to 20kg per colony. The subspecies of Asian bees, *Apis cerana javana* in Cairns and to the north of Australia is considered very unproductive, producing only a surplus of two to eight kilograms of honey per year. In comparison to honey bees the average honey crop per hive in NSW from commercially managed colonies is 100kg with reports of 200 kg per hive common and occasionally 300kg per hive is achieved.

History
The Asian bee *(Apis cerana)* is found throughout Asia and across a diverse range of climatic zones including as far north as Siberia. They are not native to the countries immediately north of Australia, including Irian Jaya and Papua New Guinea (PNG).

Records indicate that Asian bees were moved into Irian Jaya from Java in 1977. By 1987 they had spread into PNG. They proved highly invasive and by 1996 they had established throughout PNG, including the cooler highlands and the tropical lowlands.

In 2003 Asian bees were discovered in the Solomon Islands where they effectively out-competed honey bees, decimating the local industry comprising of 2,000 hives within five years.

Varroa mites naturally occur on Asian bees. *Varroa destructor* is considered the most damaging parasite of honey bees in the world today, but only occur on some strains of Asian bees. The mite found on the strain of Asian bees to the immediate north of Australia is *Varroa jacobsonii*. *Varroa jacobsonii,* was thought not to reproduce on honey bees *(Apis mellifera)* and therefore not pose a threat.

In 2008 this varroa mite was found in honey bee colonies in the PNG highlands, breeding on honey bee brood. Whether this mite is as damaging as *Varroa destructor* to honey bees remains unknown.

There have been two incursions of Asian bees into Australia where they have established colonies. In 1998 a colony of bees was positively identified and destroyed in Darwin.

A colony of Asian bees was positively identified in Cairns in May 2007 and again destroyed. Unfortunately this was one of many thought to have originated from the one incursion. A response was mounted to eradicate the bee, but by March 2011, 360 Asian bee colonies had been located and destroyed and the bee had spread a considerable distance from its point of entry.

Asian bees (Apis cerana)

Biology
The life cycle of Asian bees *(Apis cerana)* is very similar to that of honey bees *(Apis mellifera)*.

Brood is reared for 21 days from egg to hatching adult for honey bees and 20 days for Asian bees. The colony is structured the same with a single fertile female (the queen) several thousand worker bees (sterile females) and seasonally, male bees (drones).

Drone brood cappings have a characteristic pin hole in the middle.

The colour of Asian bees can vary considerably, similar to that of the honey bee. Asian bees have a very distinct stripy abdomen.

The overall size of Asian bees is approximately two-thirds the size of honey bees.

Foraging range is a lot more restricted with Asian bees, with most of the activity occurring within 300 metres of the colony and occasionally up to 1 to 2 km flight range. Whereas foraging ranges for honey bees are considerably greater, with 3 to 4 km common.

Colony population size is a major distinguishing feature between Asian bees and honey bees. Asian bee colonies with a population of 10,000 are considered large colonies. Population sizes of 2,000 to 5,000 are reasonably common, whereas honey bee populations usually range between 30,000 to 60,000 and a colony of 5,000 to 10,000 bees would be considered a nucleus colony.

Swarming activity is extreme in Asian bees when compared to honey bees. Asian bees are said to swarm for a range of reasons other than just for reproduction. Absconding swarms and migrating swarms are common and are induced for a range of reasons including a shortage of food, disturbance or pest pressure (ants, wax moth).

Swarming distances have been reported up to 10km from the original colony.

Asian bees *(Apis cerana)* are a cavity nesting bee which permits them the opportunity to increase their chances of survival in cooler climates. They also appear to favour areas of human

habitation, preferring nesting sites 1 to 2 metres off the ground. Nine Asian bee nests were reported to be contained in the walls of one house in the Solomon Islands.

Densities of Asian bees will vary according to nesting site availability and feed. High densities of colonies have been reported with up to 22 per km^2.

The genus Apis
The genus of honey bees, Apis, is comprised of eight Asian species and one western species *(Apis mellifera)*. The Asian species include:
Apis cerana
Apis koschevnikovi
Apis nulvensis
Apis andreniformis
Apis florae
Apis dorsata
Apis laboriosa
Apis nigrocincta

The European species *Apis mellifera* has a natural distribution including the African continent, Mediterranean, Northern Europe and Eastern Europe. *Apis mellifera* has been introduced to all the continents except Antarctica.

There are over 150 subspecies named within this species, of which only a few have been widely propagated for beekeeping. Asian bees *(Apis cerana)* are the next most common Apis species around the world. Although it is recognised that there are possibly many subspecies of this bee, only a few are commonly referred to, *Apis cerana indica, A.c. japonica, A.c. cerana and A.c. johni*. *Apis cerana javana* is the strain of Asian bee currently in PNG and northern Australia.

Impact in Australia
The evidence in PNG and Cairns strongly indicates that the Asian bee is a highly invasive insect and has the potential to inhabit most of the Australian landscape.

A report published by the Australian government highlights the public nuisance aspects of the Asian bee. The density of Asian bee colonies is said to be three times greater than honey bee colonies. The propensity of Asian bee colonies to swarm several times per year and their preference for human habitation areas will create significant public nuisance costs in the form of swarm removal and increased levels of stinging events.

The impact of Asian bees on Australia's ecology is likely to be highly significant. There are hundreds of native animals that consume nectar and/or pollen as part of their diet. Asian bees will be a significant competitor for nectar and pollen plus occupy small cavities displacing native birds and possums.

The impact on managed honey bees *(Apis mellifera)* is likely to be two-fold. They will be major competitors for nectar and pollen, thus reducing the honey crops produced by honey bees. Given the evidence gathered in the Solomon Islands, they are also likely to invade honey bee colonies to rob their stored honey during periods of no natural nectar supply.

Asian bees are also potential hosts of varroa mites, which are extremely devastating to honey bee colonies.

How Asian bees perform across the different environments within Australia remains to be seen. Their preference for nesting in cavities ensures that they will be successful at some level at surviving in many environments. What impact endemic pests and diseases of honey bees have on Asian bees is also unknown.

Serious outbreaks of European foul brood in *Apis cerana* in Vietnam have been reported. Asian bees are also particularly vulnerable to wax moth. Infestations of wax moth larvae cause colonies to abscond. Other pests such as the small hive beetle may also have an impact on Asian bees.

No satisfactory method has been developed in controlling Asian bees. Finding the nest and destroying it has been the only control measure used to date.

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QUEEN BEES

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STERLING KERSHAW

By Jennifer Poile

If you were ever looking for the history of the beekeeping industry, Mr Sterling Kershaw is your man. I was lucky enough to talk to Sterling at 'Wattle Valley' near Sutton, NSW, about himself and his family's lifelong involvement in beekeeping.

Mr Sterling Kershaw is the heart of the 5th generation of beekeepers as he continues to pass down his knowledge and experiences to his sons Arthur and Laurie, grandsons James and Matthew. In a similar way his grandmother passed down her unique skills to him. Yes, bee farming in the Kershaw family began with Granny Cartwright who worked 40 hives made from old Kerosene Cases. She was helped by Sterl's mother Kath, the women forming a unique beginning to a successful beekeeping business which today produces an average of 200 tonnes per annum with approximately 1500 hives.

After Sterl's mother and father where married, his grandparents moved the bees from the Sutton district to Molong leaving Sterl's father, Arthur Kershaw to collect his own bees straight out of the bush at Oak Dale only two miles away from the family home of today. "That was when they started it all." They would cart everything on the horse drawn wagon, courtesy of the Cooper family, to Mt Madura and around Canberra on the timber country where they got a lot of honey.

By the time Sterl was born in 1928, they had enough money saved up to buy a Model T truck. "That's when they really got into the bee farming." The truck allowed them to shift hives as far as Yass and Boorowa, and even then it took them all day to get there. "Technology has gone a long way since then." Sterl marvels. "Then we got a '29 Chev' and it was better again." Sterl remembers back to the long list of trucks that the family has used over the years, with the next being the '37 Chev, then the '48 GMC with many others that followed Fords, Dodges, Benz, Hino, Mitsubishi to the current Iveco and Volvo trucks with trailers.

Sterling remembers his dad Arthur, who often talked about the good old days when he shifted his bees on a horse drawn wagon. Sterl worked with his dad during the war years. After the war, Sterl continued to work with his dad in the mid 50's for 3 pounds a week. Arthur passed away in 1954 from meningitis at the age of 56. Sterl took over the bees; at that time he was running 800 hives. Only using the standard equipment that came with that era, Sterl employed casual help from his cousins and neighbours, Cliff Kershaw, a hard working 'young school leaver' and Willy Chambers who ended up getting some bees of his own over time. "Everyone started with a few bees in this Kershaw family, they all lived around here, all the cousins, but I'm the only one left working the bees now."

Sterl met his wife Barbara, through her beekeeping father William (Bill) Wilson and they married in 1957. "I went to have a look at this old fellows bees and I saw that he had a daughter, actually about 6 daughters over there." He admits. Barbara's father, Bill and I would go down the coast, Bill would cook for the hard working Willy and Sterl throughout the winter, as they worked the spotted gum. Bill always had a yarn to tell around the camp fire. One morning Bill managed to melt the plastic milk jug when he left it by the fire, he came back and saw that the jug had shrunk down with all the milk running everywhere, "so he stuck the boot into it sending it into the flames with a few choice words." Sterl laughs at the memory.

In those days the equipment was a little better than the old dip knives that Sterl's mother used to use, when Kath worked in the field with the men, however a mobile plant with two x 12 frame extractors and a boiler in a tent, seems incredible compared to the equipment used today. Barbara also joined the men in the field and she recalls how Kath would drive the Ute with the old caravan "And Sterl will bring the extracting plant and we would be away for weeks. We would get a lot of honey doing it like that."

Barbara & Sterling Kershaw

Another interesting story took place at the bee sites near Tumblong were Sterling was almost squashed by his Ford Truck when the handbrake failed "I got out to open the gate, and well, I didn't get it opened. I checked behind me and the truck was right there! I jumped away and it came up against the gate, bent it until it burst open, then it just sneaked right on through." It is these memories that make you wonder why he continued with the bees.

The 50's to the 80's where the toughest time that Sterl and Barbara remember in beekeeping. With a family of three children Arthur, Laurie and Deidre they struggled to support them, with poor honey markets, rough roads and old unreliable petrol trucks. It was in 1969 at the Kempsey Field day that Mr Kershaw joined Capilano Honey Limited, prompted by the shed full of dark Stringy Bark Honey that nobody particularly wanted except for Tim Smith who said "I'll take it if you join the company". So the deal was done.

We all have memories that we would rather not remember, similar to this one. Sterl was working alone and the truck was bogged in an awkward position for unloading, "So I started carrying all these full hives by hand on my own, sitting ones on top of others. I got the truck unloaded but I had that many hives around that I couldn't get out! I was swarmed in! It makes you wonder." Sterl recalls.

Sterl saw the light in the early 70's, he phased out the original eight frame hives as more bees where purchased in ten frame hives. "It got to the stage that they were all mixed up in one lot. Still, in my opinion, the ten framer is the better hive, if your back is strong enough. My theory is that if you have 100 ten frame hives, it's equal to 120 eight frame hives, as far as honey production goes."

Arthur and Laurie both helped their dad extract honey on the weekends while still at school. This gradually developed their taste for the beekeeping industry and they became more involved in the years after leaving school. Both sons are still enjoying the beekeeping lifestyle today.

1980 was a changing point. Sterl and Barbara took part in a Capilano bus tour to America where he was inspired by the advanced methods of production. "We came back and I said to Arthur and Laurie, 'everything has got to change. We have to put bees on pallets, get bobcats and handle and shift the bees differently.'" The Kershaw's bee operation is now up to date with the times using bobcats and Central Plantage. Sterl purchased larger equipment from America and they have never looked back.

Sterl and Barbara's three children Arthur, Laurie and Deidre were all married in the 80's. Proudly Sterl and Barbara have 9 grandchildren and 1 great granddaughter. Within Laurie and Therese family are James, Melissa, Matthew and Grant. James and Matthew have sustained the passion for beekeeping. Often Sterl shares stories with his grandchildren about the good old days, slipping in some helpful advice along the way. "They don't take much notice of me, but I tell them anyway." Sterl laughs, but I'm sure they do listen and appreciate this first hand knowledge.

Throughout 70 years of knowledge within the beekeeping industry, our veteran beekeeper recalls many changes throughout the years. As long as Sterl can remember, he has always had to deal with American Foul Brood. Since Sterl took over the business from his dad in the late 50's, Chalk Brood and European Foul Brood have been an issue. More recently the invasion of the Small Hive Beetle has seen a change in management procedures. The secret to surviving the drought and combating pests and diseases, Sterl has discovered over the years, is to maintain a strong hive of bees and to work them to the appropriate conditions, even if it is a bit different.

The Kershaw's purchase 1000 queens each year; after rearing their own queens for many years, Sterl finds it more beneficial to buy in queens. The queens make all the difference especially when it comes to dealing with pests such as the Small Hive Beetle. "If the hive looks like it's about to go down, taking the queen out straight away. Don't wait for the hive to go down even further. If the queen is only 12 months old, she will battle along but fall back to a double, by then it's too late and you are losing money. By the time you put a new queen in and try to build them back up, the season has finished. So you have to work your bees differently."

Currently the main pest is the Asian Bee which is causing a confrontation between beekeepers and Government bodies. This is the first time in Sterl's life time that beekeepers have had to go the extent of protesting against the Government decision of ceasing the eradication program of the Asian Bee. "We have had problems with the Department of Forestry regarding bee sites and that sort of thing, but nothing like this." Sterl explained.

Sterl has never lost any hives due to fire or flood but in 2003 a load was sprayed by a nearby apple orchard. Despite these incidences, Sterl wouldn't have liked to do anything else, the connection to bee farming still strong after surviving on the sales of honey during the Great Depression.

After 25 satisfactory years that Sterling and his family sold their honey to Capilano. Sterling, Barbara, Arthur and Laurie had a discussion with Beechworth Honey. Beechworth Honey was offering quite a bit more money. Contently the Kershaw family made a transition to be a supplier to Beechworth Honey, with a reliable, more consistent company. With this, Sterl's family decided to take another step forward. With the food industry regulations changing, they purchased IBC's. Sterling commented "I would hate to think about fully loading a truck and trailer with 60 pound tins these days."

Early in Autumn Sterl has taught his family to prepare their bees for winter. So therefore they maintain a good hive for early pollination in July/August. The last 3 seasons the Kershaw's have worked the Almonds. "The Almonds are very good, oh yes. For a beekeeper it's like money from heaven! Because it's too cold in July you can't work the bees." Sterl explains. "All you have to do is drop them off for a few weeks and then move them on after pollination is done. On the 1 September it's the beginning of the season; the bees have built up all ready for a honey flow."

Sterl is an inspiration to all in the industry. He feels that due to his lack of formal education he doesn't have much to offer, however he grew up during the Depression, the War and despite being threatened by fire and floods has only ever lost hives of bees from orchard sprayers. Sterl has worked with a range of equipment and materials throughout the years and has never been afraid to upgrade to the standard of the era. Sterl has discovered management techniques to maintain his hives during the onset of drought, pests and diseases but never before has he had to go to the extreme of protesting against the Government over the Asian Bee Eradication decision.

Today, Sterling is a family orientated man, and loves nothing more than to work side by side with his wife, sons, daughter-in-law and grandsons and appreciates their ongoing support. He cherishes the opportunity to be able to share his favourite thing in the world, working the bees, with the people he loves the most.

The five generations of the Kershaw family are not only an example of the history of the beekeeping industry, they are the future, and it's all thanks to Sterling Kershaw and his lifelong perseverance.

LIVING WITH THE ASIAN BEE: *by Jodie Goldsworthy*

a prospect which triggered a grass roots 'call to arms'. And the battle continues.

The Federal Department of Agricultural Forestry and Fisheries (DAFF) announced at the end of January 2011 that Australia was giving up on the eradication program for the Asian bee (Apis cerana – Java strain). This followed the continuing management of the 2007 incursion by the Queensland Government with input from our industry under the guidance of Trevor Weatherhead, AHBIC and Queensland beekeepers. DAFF dropping their bundle came just at a time when there was evidence that the eradication efforts might be working. Certainly, there was no clear scientific evidence that eradication should be abandoned, a preliminary conclusion also reached by an ongoing Senate Enquiry.

What made the situation unacceptable for beekeepers was the emerging evidence that the Asian Bee would spread across much of Australia with the impact extending well beyond the commercial interests of beekeepers. The Asian Bee would have a devastating impact on biodiversity, human health and public amenity; and eventually, it could lead to the demise of commercial beekeeping in Australia, and with it, paid pollination services. The impact on food security would be major, with crops like almonds becoming a thing of the past.

No longer were the activities in Cairns a long way away. Suddenly, our future ability to manage bees in an environment that contained a lethal combination of Asian bees, varroa mites and small hive beetle had people thinking. Canberra's handling of the situation had become unacceptable. What more could be done to support the polite lobbying from our Industry? The situation triggered a grass roots response. A call to arms.

It was recognised that there was a small window of opportunity to challenge, perhaps even overturn, the decision to abandon eradication efforts. It also seemed crystal clear that had the recommendations of the *More than Honey* report been adopted we might not be faced with the Asian Bee predicament.

A few phone calls amongst colleagues, with a common interest and vision, confirmed the importance of our industry in securing Australia's future food supply; and the threats it was facing with the Asian Bee. By 14 February a plan was formulated to bring the Asian Bee decision to the fore as the spearhead of the many complex, cumulative and interrelated issues that we must urgently address if we are to better position all of our outcomes for the future. It was recognised that a fresh approach and new resolve was required. Thus began *The Food Security needs Bee Security* campaign.

The campaign aims were simple and clear:
We were seeking commitments from the Australian Government to:

1. Immediately allocate $10 million over two years to eradicate the Asian bee in Australia.
2. Implement the recommendations of the *2008 More than Honey* report by allocating an additional $50m annually to maintain healthy bee populations to secure pollination services.
3. Provide funding for the establishment and operation of the Co-operative Research Centre for Bee Research and Food Security.

There really wasn't much to lose in the campaign because there were no positive commitments being made to industry by government and the race had already essentially been run and lost. The campaign asked for no financial contribution but rather sought grass roots involvement in time....time to spread the message, time to write to and speak to politicians and journalists; and time to attend rallies and meetings.

In taking part, all participants were expected to operate under the following values: Be respectful – Be assertive but not aggressive. The rally of more than 200 beekeepers and almost 40 trucks that gathered in Canberra on 2 March certainly embraced this philosophy along with a willingness to make an effort to bring about a greater outcome for all of us. This was one of the most empowering events we have seen in our industry for a very long time. The media interest stimulated has been tremendous.

Jodie Goldsworthy, Kate Carnell, Australian Food & Grocery Council & Trevor Weatherhead

The website: www.securefoodsavebees.com and the *Food Security needs Bee Security* logo was pulled together in less than 24 hours and drove the communications required to get information out to beekeepers, key food and agribusiness stakeholders, policy makers, the media and the public, in a professional and timely manner.

Our key messages cut through to supportive stakeholders, such as state and national farm lobby groups and the Australian Food and Grocery Council, politicians and the

broader public. This has occurred at a time of unprecedented competition for political and media attention. The campaign, the manner in which it has been initiated and its outcomes should serve to have each of us question what is required to have our messages heard amongst today's political and community competition.

Access to politicians from all parties and their ensuing support for a review of decisions by DAFF and their various committees has been extensive. The decision by the Senate to establish an Inquiry into the science behind the decision to abandon eradication of the Asian Bee has been unprecedented in the speed with which it has operated and the incisiveness of its probing investigation.

It has thrown into the spot light the bureaucratic operations of the various committees such as the Consultative Committee for Emergency Animal Diseases (CCEAD), the Consultative Committee for Emergency Plant Pests (CCEPP), the National Management Group for Asian Bees, etc. The humble honeybee doesn't fit comfortably into the Byzantine bureaucratic mindset. It's an orphaned casuality.

At the time of writing it is still unclear what the outcomes of industry's efforts will be. During a Hearing conducted by the Senate's References Committee on Rural Affairs and Transport (RAT) on 29 March, the Committee extracted a commitment from DAFF to reconvene CCEPP and review its position on eradication.

The Committee published an Interim Report on Thursday 7 April, just hours before the scheduled CCEPP meeting to focus the CCEPP's attention on issues that were taxing the Senate. It was critical of DAFF's performance. Essentially, the Senate was saying that it could not see any scientific evidence which justified DAFF's decision to spearhead efforts to abandon eradication of this pest. It put the ball very much back in DAFF's court to sort out the mess.

AHBIC, at the CCEPP meeting on 7 April, provided a circuit breaker. It submitted a plan of action which recommended that eradication efforts should be recommenced as soon as possible so that additional data could be collected to allow an informed decision on future eradication efforts. CCEPP members were sent away to review the AHBIC plan, as well as a plan that had been submitted by Queensland which centred on containment, rather than eradication, of the Asian Bee incursion. CCEPP members have also been provided with all relevant documents which underpinned the earlier conclusion that the Asian Bee could not be eradicated.

At the time of writing, CCEPP is scheduled to reconvene in several days to determine if its position should be reversed; and if so, what is the path forward. After that happens, the Senate RAT Committee will issue a final Report. We remain hopeful that sense will prevail; and that a new and concerted effort will be made to eradicate the Asian Bee before it spreads across the continent; and that beekeepers, pollination-dependent industries, the environment and the community have to live with this scourge forever. At the very least sufficient data will be collected so that an informed decision can be made. And we can tell our grandchildren that we really tried.

Please continue to visit the Campaign website which will endeavour to keep you informed of progress. It will also suggest ways in which you can continue to contribute your fabulous effort until the Asian Bee has been exterminated.

NEW MINISTER FOR PRIMARY INDUSTRIES

NSW Premier Barry O'Farrell has appointed the state's first female agriculture minister.

Katrina Hodgkinson is the new Minister for Primary Industries and Water, and her portfolio covers water and environment issues that relate to primary industries.

The Nationals MP for Burrinjuck describes herself as "a farmer's daughter". "I grew up between Yass and Murrumbateman on a fine wool stud and agriculture has been a big part of my life."

The Office for Water will remain and Ms Hodgkinson says: "I am the minister for state water, catchment authorities (which used to be under environment), forests and natural resource issues. Mining and energy are now under Chris Hartcher.

"The challenge is going to be fantastic. We've been let down by Labor who have been city centric, it has been a rough decade, we have lost a lot of good men and women. "We have got a lot of catching up to do, but I relish the opportunity."

When asked to respond to the view that water the Murray Darling Basin reforms and the emphasis on water and environment had been downgraded, she says: "I think the response to the MDB guide was panic by a lot of people in the regions. That was my response as well.

"It was an impossible document, we've been calling for the withdrawal of that document, Commonwealth legislation, but it has to be implemented by the states and we are not going to sign off on it. I am looking forward to meeting with Craig Knowles, hoping there will be a triple bottom line approach.

On the future for rural support workers, Katrina Hodgkinson says "they've been wonderful, we do need them, the former government had a lot of difficulty understanding how tough things have been. Everything is not okay now there has been some rain. I would really like to continue the great work."

On the issue of the cuts to agricultural research stations, looking for an injection of funds, and the NSW Farmers Association's call for $120 million for agriculture research, the minister says she's been concerned for a long time about R and D funding and the research stations have suffered terribly.

"I am looking forward to helping them pick themselves up."

Katrina Hodgkinson says that the former shadow minister, Duncan Gay, said he'd allow more fishing in some of the marine park areas, with three reefs committed to, and she says "the transition will be smooth from Duncan to myself, to carry through the promises."

"Feral animals and noxious weeds are two big issues, and they have come about through lack of management, and the former government created new parks but really did not properly care for them."

She cited the example of the river red gum parks "where the Minister Frank Sartor got rid of a third of state forests, and the act was a cruel blow to hard working country families in the timber industry, and it will be hard to rebuild that industry around the red gums. But the irony is that NSW will need to meet timber supply agreements and at the moment that is mission impossible. We will need to find more sources for timber."

"Food production and security is at the top of my list. Listen to speeches I've made in parliament, rather than laws and regulations.

"I'm not into being bogged down by over-regulation; I'm a farmer's daughter."

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HONEYBEE STATUTORY LEVY

With the increase in producer packing of honey, many beekeepers who have moved into packing their own product may be unaware of the Statutory Levy that is payable on all honey sales over 600kg. In the past, these levies were paid on their behalf by the commercial packers, and beekeepers who have elected to pack their own product, instead of supplying a commercial packers, may be unaware of the need to pay the levy. This levy is compulsory and should not be confused with the voluntary levy to support AHBIC. Levy is payable on:

I. honey produced in Australia; and
II. honey produced in Australia and used in the production of other goods.

Export charge is payable on honey produced in and exported from Australia.

No export charge is payable if domestic levy has already been paid on the honey to be exported.

The amount of 2.3¢/kg of honey sold is used in three ways:

1. 1.5¢/kg is paid to fund R&D (ie the workings of the R&D Committee.).Monies allocated to research and development by the Committee are matched dollar for dollar by the Commonwealth Government.
2. 0.3¢.kg is used to fund the Residue surveys demanded by overseas importers as part of the process of ensuring that honey exported from Australia is free from contamination by residues or pesticides
3. 0.5¢/kg is allocated to the Contingency Fund, held in trust by Animal Health Australia, and used in the event of incursions of exotic pests which might harm our industry. As an example, $100,000 was recently used from this Fund in the Industry's contribution to the surveillance efforts to eradicate the Asian bee (*Apis cerana*) from Cairns.

Producers who sell honey directly to the public via retail sale (including roadside stalls, shed sales, farmgate etc) are required to submit returns and payment directly to LRS on an Annual basis. Producers who use honey in the production of other goods are required to submit returns and payment directly to LRS.

People who lodge returns to LRS and people who pay levy/charge to intermediaries are required to keep records supporting the information supplied in returns or information relating to payments made to intermediaries. These records are to be kept for a period of five (5) years and are to be made available to LRS officers.

For further information or clarification on what records must be kept, who should keep them and for how long please contact your nearest LRS office. Australian Government levies administered by the LRS are exclusive of the GST (Goods and Services Tax). The levy/charge is a separate calculation, exclusive of GST consideration.

Send your completed returns and payments to:

The Secretary
Levies Revenue Service
Department of Agriculture, Fisheries & Forestry
Locked Bag 4488
KINGSTON ACT 2604

Where payment of levy is made by EFT, please fax your return to 1800 609 150. If you would like to make a payment by EFT, please call (free call) 1800 020 619 for more information. (Please note that calls to this number may incur charges if made from mobile or pay phones.)

The levy may be paid on a quarterly or on an annual basis. Penalties are charged for late returns. For further information:

The Director
Levies Revenue Service
Department of Agriculture, Fisheries & Forestry
Locked Bag 4488, Kingston ACT 2604
Ph: 1800 020 619
Email: Levies.Management@daff.gov.au
Web: www.daff.gov.au/agriculture-food/levies/horticulture

SICK BEES

by Randy Oliver - ScientificBeekeeping.com
First published in American Bee Journal August 2010

PART 1

Most any long-time beekeeper has noticed that bees are simply not as healthy as they used to be, and that we have been plagued with a spate of unusual colony collapses in recent years. As luck would have it, I've been an intimate witness to the experimentally-induced collapse of colonies in a field trial this winter and spring. My observations have helped me to better understand how such collapses play out.

We generally assume that our bees are healthy, as long as they are building normally and producing honey. The reality is that there is a constant battle going on in the hive between the bees and the parasites that seek to exploit them (note that to a biologist, the word "parasite" includes all the pathogenic mites, fungi, bacteria, and viruses). I'd like to quote excerpts from an address given in 1977 by the late, great bee pathologist, Dr. Leslie Bailey:

"Bees flourish in spite of the beekeeper, and this is because they are not domesticated….Indeed, they must have their freedom to survive [no one has yet figured out how to keep bees alive without access to natural forage].

Anyone who relies on the old accounts of bee diseases, and even on the most up-to-date books on beekeeping, will conclude that when bees are not obviously sick they must be free of pathogens; conversely, when a visibly sick colony is found to be infected with a pathogen this will be blamed for causing the disease… When I began work on bee diseases, this was the general idea, and I fully expected to cause sickness easily for my experiments. However, my bees usually continued to look well. It was not that the agents for these alleged diseases were not in my bees; I could find them quite easily, but usually they didn't produce any striking symptoms. The fact soon became clear that most, probably all of the wide variety of bee pathogens can occur in colonies that nevertheless can continue to appear healthy….

A good beekeeper understands how certain activities in beekeeping can aggravate and spread infections of all kinds. These practices include disturbing colonies unduly, hindering their normal development, keeping too many close together, keeping them in districts of poor nectar-flows, …dispersing brood in them, distributing contaminated combs to other colonies, and feeding unsuitable sugar preparations" (Fig. 1).

Figure 1. Colonies being "stimulated" in California prior to almond bloom. (Practical tip:) The feeding of syrup will induce these bees to break cluster and shift from the long-lived "winter bee" state to "forager" status. It will also encourage them to wear themselves out by engaging in fruitless foraging in an unfriendly environment. Such stimulation prior to natural pollen flows is very stressful to the colony. Due to drift and robbing in the crowded yard, pathogens can quickly spread and flourish. *Photos by the author.*

And that was back in the "good old days" of beekeeping, before I had ever heard of tracheal mite, chalkbrood, varroa, or bee viruses! Since I first started keeping bees, all the new pathogens in Figure 2 have arrived one by one. Such an onslaught of parasites is a tremendous evolutionary challenge to any species, since each new pathogen changes the equilibrium of existing host/parasite relationships, and the dynamics and efficacy of the bee immune response.

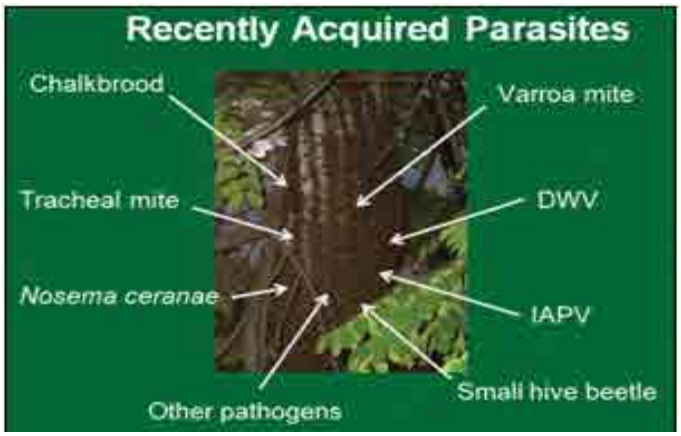

Figure 2. Bee parasites introduced into the U.S. since the 1960's. It is amazing that the honey bee is resilient enough to deal with at least eight new pathogens in so short a time! We older beekeepers reminisce about the "good old days" when all we worried about was AFB (not yet antibiotic resistant).

Likely as a result of bees trying to come to terms with the new parasites, nowadays I'm seeing bee diseases that I've never seen before (or at least haven't seen since bees suffered from Parasitic Mite Syndrome shortly after varroa arrived) (Figures 3 and 4). Plus, I suffered the unfortunate experience a few years ago of watching my colonies go through a period of dwindling and die offs that fit the symptoms of what was later named "colony collapse disorder" (CCD).

Figure 3. Sick brood suffering from what is termed "EFB-like" symptoms. Note the "corn yellow" larvae, the slumping white propupae, the sunken capping, and the partially removed sick larvae. Colonies in my operation with these symptoms flounder.

Figure 4. Sudden death of adult bees. Common in my yards in both California and Nevada, on various crops and at different times of the year. Generally there will suddenly be a pound or two of dead bees in front of one or a few hives in a yard. Then the "disease" disappears just as quickly, and the colony recovers.

I typically do not find nosema spores in the dead bees. In the one instance where I was able to put samples of dying bees onto dry ice, there were no detectable pesticide residues, and viral testing was inconclusive.

This is not just the grousing of an aging beekeeper—I feel that the fact that our bees are having to come to terms with a slew of new parasites has a great deal to do with the case of the…

"Disappearing" Bees

I started writing this article some time ago, thinking that I would first introduce the reader to the aspects of honey bee biology that lead to colony collapses. Unfortunately, I got caught up in my obsessive thoroughness (as I am want to do), and in simply trying to introduce you to the critical function of ethyl oleate in colony collapse, I wound up writing the previous four-part series on the primer pheromones! This led me to realize that if I kept it up at that rate, it would be a year before I finally got to the actual mechanism of collapse. So I'm jumping ahead now, and going to describe collapses, and *then* follow with more detailed analyses of the components involved.

Beekeepers are used to colonies perishing from starvation, queenlessness, AFB, nosema, or varroa. In these cases, each sort of deadout exhibits a signature of distinct symptoms. What has caught our attention about CCD is that it seems "different." The first reports were of a sudden "disappearance" of the adult workforce, leaving behind plenty of stores and *large areas of brood* (vanEnglesdorp 2006). A later description (Debnam 2009) describes the slow (often two-year) progression of the symptoms. In the experimental yard mentioned above, I was able to observe both the rapid and slow collapse of colonies.

There is nothing new about the phenomenon of sudden colony collapses (Underwood & vanEnglesdorp 2007). ***The historical descriptions of the symptoms of such collapse events were often strikingly similar to those that have occurred in the past few years***. Note that they occurred prior to either parasitic mite or *Nosema ceranae* arriving in this country, and before the invention of cell phones or neonicotinoid insecticides!

Therefore, I have a hard time swallowing that CCD is necessarily caused by an ***entirely*** novel factor, but *am guessing* that the recent collapses are likely a variation on an old theme. In fact, the speculation about the cause of CCD reminds me of the blind men with the elephant—many have allowed their research specialty, personal biases, or favorite pet peeves to focus on a single culprit.

So let's play Sherlock Holmes, and briefly sift through the evidence for or against the various suspects that have made the news. What I'd like to do is to apply Koch's Postulates (the accepted scientific method for identifying the causal agent of a disease).

Koch's Postulates (simplified)

1. Is the suspect factor *always* associated with the disease?
2. Will the suspect factor *always* create the same symptoms?

Let me make a quick list of suspects that do not meet both of the above postulates, since they either do not ***always*** show up in analyses of collapsed colonies, and/or do not ***always*** create CCD-like collapses when applied to colonies: cell phones or electromagnetic radiation, varroa or tracheal mites, genetically modified crops, or any particular pesticides.

That is not to say that at least some of the above could not be ***contributing factors***. And this may be a key point—the current level of colony ***losses*** (not just CCD-like collapses) indeed appears to be higher than the "norm." So it would be wise to see what novel contributing factors might be increasing the degree of losses.

What's Changed?

I've been running bees in roughly the same manner for thirty years: I pollinate almonds in February, then to prunes, then home to make splits which build up on the foothill honeyflow, then to Nevada for irrigated alfalfa for the late summer, fatten them up on Rabbitbrush in fall, and then winter them back in the foothills. Worked like a charm, year after year.

The introduction of tracheal mite hit me hard, but I quickly recovered with resistant stock. Varroa brought me to my knees; recovery was much harder, but I was still eventually able to greatly expand my operation.
However, things were no longer the same. Queens would fail, and colonies would go queenless. Winter losses were higher. Beekeeping was just tougher. Dave Mendes notes that "bees are simply more 'fragile' than they used to be."

Then in 2004 and 2005 my bees weren't right. At first they just didn't build up normally, and often exhibited the odd diseases in the photos above. Then they suffered serious fall and winter collapses (a fellow beekeeper in the same area lost thousands of colonies, but oddly, not so another buddy with yards alongside ours!). We erroneously blamed it on the mosquito spraying due to the West Nile Virus scare—further investigation did not support that link. And when I asked the growers, they hadn't changed seed type nor pesticide use (most didn't use any) for years. I couldn't keep my numbers up, and was puzzled and distraught.

Then Dave Hackenberg made the news when he suffered unusual colony collapses in 2006. The point that he made was not that he suffered losses, but rather that the degree of the losses and way in which colonies collapsed, was unlike anything he had ever seen before. Something had changed!

What bugs commercial beekeepers is when folk blame long-time practices for this new problem: we've been trucking bees, using plastic foundation, feeding syrup, and had varroa mites for some time, and our bees generally thrived (as long as we kept mite levels down). ***So I'd discount any purported cause that hadn't changed shortly prior to the appearance of CCD.***

Some changes that ***did*** occur in that time frame were:

1. **Additional colony stress due to the resurgence of the varroa mite and buildup of miticides.** When mite levels increase, colonies die. At the time when colony collapses were increasing, some miticides had begun to fail, which

then led to higher mite levels, the use of stronger miticide doses, and the use of multiple miticides. This resulted in increasingly high levels of comb contamination from those beekeeper-applied miticides (BAM's)—the most common pesticides now found in hives (Mullin 2010; imidacloprid, by the way, was detected in only 1% of U.S. samples). Indeed several blue-ribbon studies from throughout the world have linked colony deaths with high levels of (often illegally applied) BAM's. *(However, this wasn't the case with me, since I had eschewed synthetic miticides since the year 2000).*

2. **Large-scale unfavorable weather events** preceded many reported collapses—mainly droughts in the Midwest, South, Texas, and California, very wet summer weather in the Midwest and East last year, and unusual frosts in the southerly states. Poor weather during expected bloom periods causes major nutritional stress for the bees. Perhaps more importantly, drought and wet summers create two serious problems related to Deformed Wing Virus (DWV): colonies don't build large enough to outbreed varroa, *and* beekeepers may be tempted to put off mite treatment in order to get that last super of honey. If mites are not controlled by the end of August, the colony may enter winter with eventually fatal DWV levels (Martin 2010). *(I don't feel that abnormal weather was a factor in my losses).*

Figure 5. These stacks of empty pallets indicate the degree of losses suffered by one beekeeper this winter in California—the deadout boxes were shipped home separately to save space. He attributes the losses largely to "natural events"—poor weather that left the colonies in a stressed condition. He has subsequently restocked the equipment. The ability of beekeepers to recover from such misfortune, although at staggering financial expense and lost income, tends to mask the serious costs of maintaining a bee operation these days. *Photo by Dr. Jerry Bromenshenk.*

3. **More expansive monoculture and herbicide use**, which results in incomplete bee nutrition, due to the elimination of the weeds that previously provided good forage to honey bees. There is also a shift in the types of pesticides applied--many environmentally more benign, but at the cost of being systemic in the pollen and nectar. Also of particular concern is the effect of the new classes of fungicides upon colony health—note that boscalid (Pristine, first registered for use in 2004) causes major problems to beekeepers in almonds, and is also widely sprayed during bloom on apples, sunflower, canola, and a host of other crops. *(Again, other than in almonds, I had always avoided crops with any pesticides).*
4. **The shift of beekeeping to larger-scale operations** (at least in the U.S.), and especially the industry shift to almond pollination midwinter. The homogenization of bee pathogens from throughout the country occurs each year in the California almond orchards. The changes in management necessary to fill contracts for strong colonies in February, especially following a poor season, may be challenging, and not all beekeepers manage to stay on top of colony health and nutrition. (*Being a California beekeeper, I'd always managed my bees for almond pollination).*
5. **The introduction of *Nosema ceranae.*** What can I say? Being infected by nosema all through the year just can't be good for bees, and Dr. Mariano Higes' work strongly suggests that it was associated in the unusual losses of colonies in Mediterranean Europe about that time. However, archived samples from Dave Hackenberg's operation in 1985 tested positive *N. ceranae*, but Dave didn't notice CCD problems until 2006! But apparently *N. ceranae* did not become widespread in the U.S. until about 2004 (Evans 2010)—which certainly puts it on the short list of suspects. *(When I tested my colonies for* N. ceranae *in 2006, only some had it, but not at high levels—it was too late by that time to test the deadouts from the previous years).*
6. **New or more virulent strains of bee viruses.** Varroa changed everything about virus presence, transmission, and virulence in bees. Note that widespread colony losses have only been reported from countries is which varroa is a problem (Neumann 2010). Colonies without mites may be virus free (Highfield 2009), but up to 100% of colonies *with* varroa may be infected by one or more viruses, *even if there are no apparent symptoms* (Tentcheva 2004). ***The scary thing about viruses is that they can suppress certain aspects of the immune system, and interact with each other, and with nosema!***

So could new virus strains, such as Israeli Acute Paralysis Virus (IAPV) be the problem? And where would they come from? Some have pointed the finger at Australian imports, but there are two flaws that I see in that logic—collapses started prior to the first imports in 2005, and Canadian beekeepers imported plenty of Aussie bees, but did not suffer concurrent massive losses. However, I don't want to let imports off scot-free. Dr. Elke Genersch (2010) points out that "Repeating previously observed scenarios, the dramatic increase in emerging virus diseases in the honey bee may still be worsened by the continuing development of international exchanges and the potential dissemination of still undiscovered viruses or other agents that may favor their active multiplication."

New virus strains may have come from elsewhere, but can also arise spontaneously through their rapid evolution (like human flu viruses), or by passing through an alternate host (such as bumblebees or yellowjackets or perhaps varroa). In fact, the bee viruses actually exist as "virus clouds" of slightly differing, constantly changing strains, generally becoming more virulent each generation until they reach an equilibrium (which changes again each time the bees gain a new parasite)(Agudelo-Romero 2008).

I've been noticing such changes in my own bees. I saw more sacbrood (some of it odd looking) in those two years than I had ever seen before, more unusual larval deaths, and also more symptoms of Chronic Bee Paralysis Virus (hairless black trembling bees). There were sudden losses of adult bees as illustrated in Figure 4, suggesting rapid-acting viruses. ***But most notable was that the epidemiology of deformed wing virus (DWV) appeared to have changed—it no longer required high mite levels to show evidence of symptoms.***

The case for fingering viruses as a prime suspect involved in colony collapse is strong. It's been well established that it is one or more viruses that finally take down a varroa-infested colony (in which the adult bees also "disappear" suddenly—but, in the case of DWV, leave clear symptoms in the brood).
There are a number of other pieces of evidence that implicate viruses:

1. Most emerging infectious diseases on Earth are caused by viruses.
2. The disorder appears to be transmissible from one colony to the next (vanEngelsdorp 2009), and can spread from yard to yard (Debnam 2009). Only a disease caused by an infectious, transmissible pathogen would be expected to behave in such a manner. By process of elimination, the causal parasite would likely be a virus, since parasites other than viruses would be fairly readily detected (OK, could be a viroid or even a prion if you want to get picky).
3. The sterilization or "resting" of combs from failed hives

decreased the incidence of collapse following reintroduction of fresh bees. Bee viruses tend to become noninfective when dried (Bailey 1967; and from personal experience with DWV deadouts).

4. Analysis of the bee immune response in CCD colonies indicated that the main infection was likely viral (Johnson 2009). The same study found that DWV and a number of similar viruses were more abundant in CCD bees, and that the bees exhibited "all the signs of death by massive virus replication." On the other hand, Bromenshenk (2010) found that DWV was negatively correlated with collapses in the operations that he sampled (another virus appeared to be involved)!
5. Titers of some viruses are strongly correlated with colony losses in Europe and the U.S. (Highfield 2009, Berthoud 2010, Evans 2010) (but different viruses appear to be associated with losses in different areas, and at different times of the year). vanEngelsdorp (2009) found that "colonies co-infected with 4 or more viruses were 3.7 times more frequent in CCD colonies than in control colonies."

It sure appears to me that viruses look pretty guilty, and the results of our field trial strongly support this hypothesis. But viruses ***generally*** don't take down a colony on their own, or there wouldn't be any colonies left alive today! Colonies appear to normally be able to "purge" a within-hive virus epidemic (Bailey 1983), ***unless it passes a certain threshold of numbers of bees infected*** (Sumpter 2004). Or, perhaps we should more clearly define what a viral "epidemic" is. Sumpter states: "An epidemic can have a range of severities, an epidemic may mean the virus persists at a low level with only a small proportion of bees being infected,…or it may mean the virus has spread through the whole colony."

So the question to me is, what factors or circumstances will kick the low-level viral epidemics that our colonies normally experience, into the sort of raging epidemic that results in rapid colony collapse?

Some clues come from beekeeper observations. In a recent self-reported survey, U.S. beekeepers ranked the following factors as contributing to colony losses (top to bottom): starvation, queens, weather, mites, weak in fall, *Nosema*, management, CCD, and pesticides (vanEngelsdorp 2010). Please note that colonies fail for many reasons, and that ***most deadouts are <u>not</u> the result of CCD***. This can make the investigation of the cause(s) of CCD difficult, especially when the Government is offering financial compensation to beekeepers who claim that their losses were caused by CCD! The above survey results indicate that most beekeepers will honestly report the true causes of their losses, to the best of their knowledge. And of the causes, four factors clearly stand out, both historically and associated with recent collapses.

The "Four Horsemen of Bee Apocalypse"

Poor nutrition, due to drought, extended rain, lack of bloom, or crop monoculture. Also includes starvation from lack of nectar or honey. I've written at length about bee nutrition--any fool can keep bees alive during a good nectar and pollen flow! It's generally when bees become nutritionally stressed that they get sick.

Cold snaps in spring or fall, ***when the colony is not in winter cluster.*** When I look at the historical accounts of collapse events, a cold snap often jumps out. ***Honey bees are tropical animals***, and the European honey bee has adapted to life in temperate climates by living in insulated cavities, and by forming a heated winter cluster consisting of long-lived, stress-resistant "winter bees." A cold snap when a colony is not prepared for it can chill the brood and stress the workers (especially by depressing their suppression of viruses, nosema, and chalkbrood).

Toxic chemical stress—this can be from natural plant toxins (Fig. 6), heavy metals, environmental pollutants (such as PCB's), any sort of pesticide, or beekeeper-applied miticides. Bees have evolved the ability to detoxify many chemicals (including pesticides), but that ability is depressed when they are nutritionally stressed or cold.

Figure 6. Honey bees have needed to deal with environmental toxins long before humans started using pesticides. This forager may be unwittingly poisoning its colony by working California Buckeye. Generally, my bees take the nectar, but do not collect the toxic pollen (the literature is unclear as to whether the nectar is also toxic). In years when the Buckeye products are not diluted by other nectars and pollens, this natural toxin can devastate colonies.

Parasite stress, especially infection with multiple parasites (remember, this includes viruses). There are several pieces of evidence linking parasites to CCD, notably that excessive numbers and variety of parasites often exist in the sick colonies (Cox-Foster 2007).

The first three "Horsemen" (nutrition, chill, and toxins) don't normally directly take down a colony (except in the case of severe starvation or pesticide poisoning)--***it generally takes a combination of more than one factor to do the job***, as long as the bee stock is robust and genetically diverse.

That leaves parasites to apply the *coup de grâce.* So which parasites can cause symptoms similar to CCD? There are four that stand out:

1. Viruses—covered above, perhaps a new strain.
2. Tracheal mite, but it simply isn't found to any extent in CCD colonies.
3. *Nosema apis*—the "old" nosema. This long-time scourge of the honey bee may cause colony collapse: "In a typical case of a colony being depleted because of a Nos*ema* infection [normally in winter or spring], the queen can be observed surrounded by a few bees, confusedly attending to brood that is already sealed" (Anon 2004). However, there is generally distinct dysentery, and dwindling of the colony, and it normally doesn't kill strong, healthy colonies with adequate nutrition.
4. *Nosema ceranae*—A great body of research by Dr. Mariano Higes (2010) supports the hypothesis that *N. ceranae* causes colony collapses. However, the progression of disease as he describes it is not universally observed by either other researchers or beekeepers (nor in my own test yards), so there are likely other factors at play (let me be clear that I greatly respect the work of the Higes team, and that I correspond regularly with Dr. Higes and find him to be most helpful in trying to resolve this quandary). A number of researchers have suggested that poor bee nutrition and/or weather play a major role in the pathogenicity of *N. ceranae* (Pajuelo 2008).

So could one or both of the nosema "cousins" be involved in CCD? Cox-Foster (2007) found ***both*** species of nosema in

all CCD colonies, **with *N. apis* at surprisingly high levels**. vanEngelsdorp (2009) found that "Co-infection with both *Nosema* species was 2.6 times greater in CCD colonies when compared to control colonies."

Then at the American Beekeeping Federation conference early this year, Dr. Jerry Bromenshenk stated that his extensive data from CCD sampling supported a dual-pathogen (virus + nosema) hypothesis, which was later echoed by a presentation this May by Dr. Jay Evans (2010).

One clue may be that nosema and viruses often go hand in hand—some viruses are only found in association with nosema, perhaps because a nosema infection breaches the integrity of the normal effectiveness of the gut wall as a virus barrier. However, clinching the virus/nosema link is difficult—the detection of viruses depends largely upon experienced technique and having the proper primers at hand, so it is easy for some viruses to go undetected. There is also another critical point to keep in mind—***that both bee viruses and N. ceranae are constantly changing by recombination of their genes*** (de Miranda 2009; Sagastume 2010), ***so the virulence of the parasites could vary from month to month, area to area, and colony to colony!***

So, can researchers induce CCD by inoculation with viruses (and fulfill Koch's second postulate)? Dr. Diana Cox-Foster (2008) inoculated nucs in a greenhouse, and found that "rapidly increased death of bees was observed within a week after feeding the colony sugar-water containing the IAPV….Although these symptoms were consistent with reported symptoms of CCD, effects on the brood were not like that observed in CCD colonies. In CCD colonies, brood appears to remain healthy and strong, with the primary death being observed in adult bees." I will return to this observation later, as I do not feel that it precludes IAPV from causing CCD-like symptoms, however, in later surveys in other areas, IAPV was not found in the majority of collapsing colonies, so is unlikely that IAPV alone is the major cause of CCD.

In my own trials with caged bees in an incubator, inoculation with a purified cocktail of mixed viruses, originally extracted from collapsing colonies, caused rapid and near complete mortality of the bees in some cages at about nine days. Dr. Wayne Hunter confirmed that this is normal. In my field trial, feeding the same cocktail in syrup also initiated collapse of colonies within ten days, some failing rapidly, some suffering an agonizingly slow death over the course of months! ***This is a very important point—that oral ingestion of viruses by adult bees can cause rapid illness and death.*** I will expound upon this point later in this series.

OK, so we've got some likely suspects. In the next installment, I will explain two critical aspects of the honey bee immune response that can lead to colony collapse, detail how the "Four Horsemen" fit in, and present a model of the process.

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NICK'S NEWS
from I&I NSW

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Firstly, for my article in the previous Honeybee News, I would like to apologise for forgetting to recognise the substantial support the Honey bee section of the Rural Industries Research and Development Corporation (RIRDC) provided throughout the development of the SHB control device 'Apithor'. Without this support this product would not have been developed.

Contamination by SHB in the honey shed

This wet summer just gone saw the expansion of the SHB to areas where it had previously not been considered a pest. Particularly in the honey shed when beekeepers left honey supers for days waiting to be extracted. As these boxes have no bees to protect them, the SHB are able to lay eggs and with hot humid conditions these eggs are capable of hatching very quickly (< 24 hours at 35ºC). The hatched larvae then feed on the honey and pollen in the combs and in doing so contaminate the combs with a yeast (*Kodamaea ohmeri*). This yeast then causes the honey to ferment resulting in the combs having a wet appearance and in more heavy infections the honey will ooze and bubble out of the cells and seep to the floor. This is known as "sliming", which I suspect most of you have become familiar.

Contamination by SHB of honey is suspected of being the cause of a potential threat to the industry. Recently a honey packer contacted me regarding contamination of the honey they were selling. Their honey is tested for microbial content by a standard plate count (Total Aerobic Count). This is done by diluting, growing and counting the microbes present within the honey. Most large scale honey buyers require the honey to have < 1000 cfu/g (colony forming units per gram) in packer finished product. Usually honey from Australian beekeepers has been <100 cfu/g, but recently more honey has been up in the 200-400 cfu/g range with a couple of beekeepers over the >1000 cfu/g getting as high as 5000 cfu/g. It is strongly suspected that this is the result of beekeepers extracting honey (willingly or unknowingly) that is contaminated by the *K. ohmeri* yeast spread by SHB larvae. Whether this increase is a result of *K. ohmeri,* needs testing to be confirmed. If this is the case beekeepers need to start to be more aware of what they are putting through the extractor.

There are ways to prevent SHB damage to your combs once removed from the hive. There is the obvious one of extracting almost immediately after removing the honey. But this is not always possible and can put restrictions on management decisions and requires great discipline. The time of year also has a large impact on the potential for SHB damage with much greater risk during the warmer periods. Recent research I did, funded by RIRDC, looked at the temperature and relative humidity (RH) thresholds that prevent SHB egg laying and egg survival. It found that ≤ 15ºC and ≥ 45ºC prevented SHB from laying eggs and eggs exposed to these temperatures did not hatch. It also found that 34% RH also prevent SHB eggs from hatching. These thresholds therefore prevent SHB reproduction and the associated larval damage and can be used by beekeepers to create controlled environment rooms to store honey supers.

There are pros and cons associated with achieving the different controlled environments. Honey supers can retain significant heat or be well insulated when brought in from the field and, if stacked tightly together, the central boxes will be insulated by the surrounding supers. To overcome this thermal inertia and to hasten heating or cooling throughout all boxes, it is recommended that they should be stacked in such a way as to allow good air flow through them. This is also vital to gain consistent RH throughout a room of supers. For all good air movement is essential between the stored supers to achieve and maintain uniform conditions throughout the room. Air movement can be further improved by the use of fans.

The use of temperature controlled rooms requires insulation and energy consumption to maintain the required conditions which can be costly to set up and run. Although SHB adults can survive but not breed at 15ºC, this low temperature needs to be maintained throughout storage if using cool rooms is adopted as a management strategy. It will also prevent wax moth damage. However, low temperatures can increase the chance of the honey candying and lower honey viscosity, making extracting more difficult. Despite these disadvantages, use of lower temperatures is more fool-proof with much less accurate temperature monitoring required and also a reduced urgency to reach the required temperature.

The use of hot rooms could be used to prevent SHB damage (I am unaware of anybody using it); however, great care needs to be taken in monitoring and achieving an even temperature distribution so that combs do not melt or sag which is particularly an issue when full of honey, because of their additional weight. The use of insect-proof rooms in combination with temperatures of 45ºC, which kills SHB adults in less than 18 h, means the heating could be turned off after the appropriate exposure period had been reached. This would also control wax moth. High temperatures will also aid honey viscosity, allowing easier extracting. Also, in the process of heating the room contents to 45ºC the intermediate temperatures may increase SHB development and the rate of fermentation spoilage of SHB-contaminated frames. Thus, a rapid temperature rise to 45ºC with accurate monitoring is the preferred option. So, in practice, it is probably safer to avoid this storage technique for full honey supers.

Using dehumidifiers to create low humidities for SHB management is likely to have lower infrastructure costs and running costs, and can allow room temperature manipulation to aid in honey extraction. Airtight rooms help maintain low humidity levels which is more important in humid regions where SHB is a problem. Low humidity storage also helps prevent moisture absorption by the honey. The low RH does not prevent wax moth. I am aware of a beekeeper on the far north coast successfully using dehumidifies to store honey supers. If it works there it can work anywhere in the state.

These thresholds can also be used in the storage of empty honey supers.

So there are options available to prevent SHB damage to honey supers in the honey shed and provides flexibility to the beekeeper. So as producers of honey, ensuring you are supplying a quality product, remove all SHB contaminated frames prior to extraction. As a beekeeper you would not want to be responsible for a consignment of honey being rejected as it could be costly to you as well as damaging our market reputation.

RECIPES

Honeyed Chicken Stir Fry

600g chicken breast fillets, thinly sliced
2 tablespoons salt-reduced soy sauce
1/4 cup honey
1 garlic clove, crushed
1 teaspoon finely chopped fresh ginger
100 mushrooms thinly sliced
1 medium red capsicum, chopped finely
160g beans cut into 8cm lengths
425g baby corn kernels drained

Combine the chicken, soy sauce, honey, garlic and ginger in a large bowl, refrigerate for several hours or overnight.

Stir fry mixture in a wok or large non-stick frying pan until chicken is tender. Remove mixture from wok.

Stir fry mushrooms, capsicum, beans and corn for five minutes or until beans are tender. Stir in chicken and cook stirring for about two minutes. *Serves 4*

Honey Popcorn

1 tablespoon vegetable oil
1/3 cup popping corn
15g butter
1/4 cup honey
1/2 cup caster sugar
1/4 teaspoon bicarbonate of soda

Heat oil in a saucepan over medium heat. Add the corn and cover with a lid. Cook, lightly shaking the pan, until all the corn has popped. Place in a bowl.

Place the butter, honey and sugar in a saucepan over low heat. Stir until the butter is melted. Increase heat to medium and bring to the boil for 3-4 minutes or until golden and thick.

Remove from heat, add the bicarbonate of soda and stir to combine. Pour the honey mixture over the popcorn and toss to combine. Spoon onto a baking tray to set. Break to serve. *Serves 4*

Honey Fruit Bars

1 x 200g packet fruit medley
65g butter
1/4 cup honey
3 cups corn flakes, crushed
1/4 cup peanuts, roughly chopped

Melt butter and honey together in microwave for one minute.

Combine corn flakes, fruit and peanuts in a bowl.

Add corn flake mixture to butter and microwave mixture for a further two minutes.

Press mixture firmly into a bar tin and refrigerate. Cut into bars to serve.

Sultana Anzacs

1 cup sultanas
3/4 cup rolled oats
2 tablespoons desiccated coconut
3/4 cup plain flour
1/2 cup brown sugar
1/4 cup dark honey
2 tablespoons butter
1 1/2 teaspoons bicarbonate of soda
2 tablespoons boiling water

Mix oats, coconut, flour, sultanas and sugar together.

Melt butter and honey together. Mix soda with boiling water and add to the honey mixture. Stir into dry ingredients.

Place tablespoonfuls of mixture onto lined baking trays and bake for 15 minutes at 160º C. *Makes 16*

Panforte

1 cup mixed fruit
1 cup macadamia nuts
1 cup walnuts
1/2 cup plain flour
1/2 cup cocoa, sifted
1 teaspoon cinnamon
1/2 teaspoon chilli powder
60g butter
1/4 cup honey
2 teaspoon brown sugar
1/4 cup caster sugar

Mix nuts, mixed fruit, flour, cocoa, cinnamon and chilli powder. Make a well in the centre.

Melt butter, sugars and honey in a pan until it comes to the boil. Add to the flour mixture.

Spoon mixture into greased and lined 20cm round cake tin and bake for 30-35 minutes at 180º C. Cool in tin before turning out then dust with icing sugar and cut into wedges for serving.

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Bee experts and apiarists from all over Australia will be gathering in Dubbo, NSW for the 2011 Beekeeping Field Day.

Exhibitors will be travelling from all corners of Australia and even the guys from Xenacom in New Zealand will be flying in! Other exhibitors include Apiary Cots from Victoria, Beeco from Queensland, Pender Beekeeping Supplies from NSW and the Healy Group is bringing some LycoLoaders from Sydney.

The field day host will be the Western Plains Branch of NSW Apiarists Association (NSWAA). Bryn Jones, President of the Western Plains Branch of the NSWAA is looking forward to the field day, "There is a lucky gate prize of a Bee Suit or honey for the non-beekeeper, there is a Boot Sale so bring your old beekeeping equipment you want to sell!!

We are going to arrange a frame nailing and wiring competition and you can use your own special wiring board. We are working on having a couple of speakers about Bee Disease and SHB." Free entry to any beekeeper who brings along an interesting bee truck. We also hope to demonstrate netting bee trucks.

The field day will run from 9am until 5pm at the Greyhound Racing Track in Dubbo, NSW. It follows the 98th Annual State Conference in Dubbo (May 19/20). Entry is only $5 per person or $15 for the whole family and food will be available all day, including breakfast. Exhibitors can register now.

For further information call 02 6884 4654 or email fieldday@beekeepers.com.au

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DUBBO R S L Club
"Starlight Room"
19 & 20 May 2011

In conjunction with
NSWAA AGM / Conference

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Apimondia 2011

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Quadrant Australia is conducting two technical tours (pre and post), in combination with the Apimondia 2011 Congress being held in Buenos Aires from 21st to 27th September.

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THE TOUR PROGRAM

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Apimondia 2011: Buenos Aires - 21st to 27th Sept (includes technical tours in Argentina)

Post Tour: Chile and Argentina— 28th Sept to 9th Oct

Fly to Baraloche and spend 2 days sightseeing and visit apiarist in the Patagonian Andes. Travel to Chile via the spectacular Andes Lakes Crossing then visit bee keeping and honey interests in southern & central Chile. Fly to Santiago for some sightseeing and winery visits. Attend an international bee-keeping forum before returning to Australia .

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Mailing Address: PO Box R838, Royal Exchange NSW 1225
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Email: ahbic@honeybee.org.au Website: www.honeybee.org.au
Executive Director: Mr Stephen Ware

UPDATE - AHBIC ACTIVITIES

The following provides an update of recent activities of AHBIC naturally if you should seek any further clarification please do not hesitate to contact the AHBIC office. March has been a very busy month for Industry. AHBIC continues and is involved in the following matters:

Canberra Rally - Along with other representatives of Industry meetings were held with parliamentarians from all sides of the political spectrum. Honey was provided to all members of parliament along with the 4 key messages on the label:

1. Eradicate *Apis cerana*
2. Increase Honeybee research
3. Implement 'More than Honey' Report
4. Resource access for Honeybee pollination

AHBIC would like to thank all those who participated in the Canberra Rally we also acknowledge and thank Jodie Goldsworthy and Dr Max Whitten for their efforts for what was clearly a strong display of unity within the Beekeeping Industry.

Dr Ben McKee, Trevor Weatherhead, Jodie Goldsworthy, Senator Christine Milne, AHBIC Chairman Lindsay Bourke & Dr Max Whitten

A Beekeeping Family at the Rally

Further details may be obtained on the AHBIC website along with more photos of the event. www.honeybee@org.au

Bee Surveillance - Industry is currently consulting with the Consultative Committee on Emergency Plant Pests (CCEPP) to revamp the surveillance system for Emergency Bee, Pests & Diseases. Surveillance is a fundamental component of any biosecurity system as knowledge of pest status is the basis for managing risks. At the time of writing Industry is currently involved in looking at our present surveillance activities and ways of making these more effective.

Organic Honey Products - The Federal Government has announced an inquiry into the labelling of organic materials and has invited input from Industry and others. In this edition a detailed explanation and survey is provided. Members interested in this area are encouraged to respond.

B-QUAL - On 15 March a meeting of B-QUAL Australia was held in Adelaide and it was pleasing to note the B-QUAL has been invited by the Queensland Department of Environment and Resource Management (DERM) to trial B-QUAL's existing Environmental Management Plan (EMP) that was developed in draft form in 2007.

Registration Apistan, Bayvarol and Apivar - These chemicals fall under the definition of veterinary products. AHBIC has therefore submitted applications for minor use permits to enable these products to be used in the event that Varroa mites are found in Australia.

Biosecurity Update - Industry continues to follow up with DAFF regarding live bee exports to the US and also the re-opening of Eastern Creek Quarantine Station for Queen Bee imports. Biosecurity Services Group continues to press that the United States to re-consider its decision to prohibit the import of bees from Australia.

With regard to the importation of queen bees and use of Eastern Creek Quarantine Station - the review of the policy for the importation of queen honey bees remains a high priority for the department and work on it is progressing. It is expected that a draft report will be available for comment in the first half of this year.

AHBIC 2011 AGM

The 2011 Annual General Meeting of the Australian Honey Bee Industry Council will be held in South Australia in conjunction with the South Australian Apiarists' Association Conference on Friday, 8 July 2011 at Rydges South Park, 1 South Terrace, Adelaide SA 5000.

The South Australian Apiarists' Association (SAAA) has negotiated an accommodation package deal with Rydges South Park. The Secretary of SAAA, Mrs Wendy Thiele is responsible for all accommodation bookings – please contact Wendy on Phone: 08 8635 2257, Mobile: 0400 264 031 or Email: secretary@saaa.org.au

BEES MAY UNLOCK THE SECRET OF AGEING

By Claire Connelly
www.news.com.au

Study finds reversing social structure also reverses mental decay... in bees

Along with providing honey and movie makers with one of the scariest sound effects ever to be used in B-grade horror films, bees may also help us unlock the secret of ageing. Scientists have discovered that the brains of tiny buzz boxes can be programmed to repair themselves. The secret? It could be as simple as changing their routines.

"Ageing is defined as decline in function with age," Norwegian University of Life Sciences associate professor Dr Gro Amdam, told news.com.au. "Brain function is one ability that often declines as people age.

"What we found is that some bees defy this rule or fate of ageing, by their capability to improve brain performance even after senescence, while they are still (technically) getting older."

Prof Amdam recognised the possibility after studying why old bees had worse memories than young bees. By associating certain scents with a reward, then studying whether the bees could recognise it later on, he found that bee brains degenerated with age like humans. Prof Amdam found that most of the older bees could make the association between scent and reward but were slower to respond than younger bees.

The study also showed that the older bees which had symptoms equivalent to human dementia or Alzheimer's were unable to make the connection at all. With proof that bees do indeed suffer human-like mental decay, Prof Amdam then set about finding what differentiated old bees from young bees.

The most obvious answer? Social structure. Like humans, bees have a rigid social structure. Generally, the old bees gather food while young bees play babysitter, remaining inside the hive to care for the larvae. So Prof Amdam sent the young ones out to hunt while the older bees stayed home. Almost immediately, she detected a surge in the older bees' learning and memory functions.

Some bee brains, it seemed, were flexible, with the ability to "deviate from the trajectory of decline to an upward trajectory of improved capabilities".

Even more remarkably, Prof Amdam was able to record physical changes caused by the social change. She found that eight proteins responsible for aiding growth, development, repair and maintenance of brain cells had massively increased in size. Some even doubled their normal levels. This relates to humans, Prof Amdam said, because many of the proteins found in bees have human equivalents.

"There is evidence (not by my group) that cognitive function can be maintained for longer or even improve in some elderly people," Prof Amdam told news.com.au. "Some of this research involves behavioural challenges like solving crossword puzzles, or interacting with other people.

"These findings are of course very interesting also for us, since our bees are also 'challenged' with new tasks and interactions when they 'revert' from foraging to nursing."

Prof Amdam is planning to work with other researchers to take these findings to the next level.

"We want to understand the proteins that make bee brains better," she said. "I want to know if there can be general implications for other brains, including human brains."

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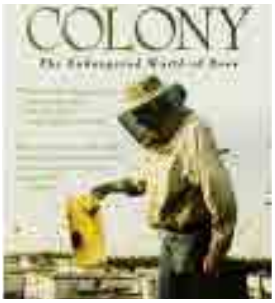

COLONY : THE ENDANGERED WORLD OF BEES

Colony: The Endangered World of Bees is multiple award-winning documentary in a Digital and DVD release from Directors Carter Gunn and Ross McDonnell and Fastnet Films and Docurama Films.

About the Documentary:
Few people realize that honey bees pollinate one-third of our fruits and vegetables. In fact, these incredible insects play a vital role in producing our food and ensuring our survival. Although honey bees are some of the most resilient, efficient and industrious insects, entire colonies are dying off. Why? COLONY investigates the circumstances and the impacts of "colony collapse disorder" by focusing on beekeepers dealing with the crisis. As these families and individuals struggle to understand this lethal problem, they illuminate the devastating effects of bee extinction not just on bees, but on people. An eye-opening account of a little-known, yet essential, subculture in America, COLONY brings to life the fascinating world of bees—and the frightening possibility of their disappearance.

DVD Release Date: 29 March 2011
Buy Colony DVD from: www.Amazon.com

BRANCH NEWS

SOUTHERN TABLELANDS

The Southern Tablelands Branch held their AGM in the Goulburn Workers Club on 2 April 2011. The new executive members are: President Laurie Kershaw, Vice President Reg Marsh, Secretary Bill Stratton, Treasurer Therese Kershaw and Resource Officer James Kershaw. Vice President Reg Marsh held a "Think Tank" on the control of small hive beetle, it was very interesting and everyone attending stayed and took notes. There is no clear way of treating this pest but all agreed something is better than nothing.

Our next meeting is at the Royal Hotel, Bungendore on 23 July 2011 starting at 2.00pm with Guest Speakers Warren and Rose Taylor. All beekeepers are welcome to attend.

Bill Stratton
Secretary

SYDNEY

Members brushed up on the road rules at the last meeting thanks to our interesting guest speaker, Mr Ed Scully from the RTA.

At the next meeting we are hoping to have a speaker from the Fire Service to speak on regulations for Total Fire Ban days.

Branch volunteers are working at the Sydney Show and preparations are well underway for the Hawkesbury Show which will be held on 13, 14 & 15 May 2011.

Kevin Haswell
President

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To All Industry Members,

As most of you are probably now aware Chris Kath has moved on from Superbee after a very successful 7 years. To those of you whom I have had the pleasure to talk to, I would very much like to thank you for your support and understanding during this transition.

After now settling into the new role, I'm looking forward to introducing myself to those of you who I have not yet had the chance to meet. By all means, please feel free to pop in for a chat or give me a call anytime.

I would like to say a big thank you to our Operations Manager, Russell Pout, who I am looking forward to working closely with. Many of you may already know Russell and I am hoping that the two of us can get around to visiting some of you in the coming months.

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