AUSTRALIA'S

HONEYBEE NEWS

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Volume 6 Number 2
MARCH-APRIL 2013

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COVER: Craig Klingner demonstrates a "beard of bees" at the Sydney Show PHOTO: Royal Agricultural Society of NSW/Simon Bullard

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PRESIDENT'S REPORT

As I write this report most beekeepers will be starting to wind up their operations as the season is nearly over. The State, across the board has had a below average year with only a few exceptions. Other states like Victoria and South Australia have experienced in some areas the worst season in 20-30 years, reports of feeding sugar in the middle of summer and beekeepers barely turning an extractor for the season common.

Despite this honey prices still remain disappointingly stagnant right across Australia. With 5- 6 months before next year's honey crop begins to come in surely we will see some movement upwards as stocks diminish.

The Royal Easter Show and *Honeyland* have wound up for another year. School holidays being out of whack with this year's RAS has seen a slump in attendance. The first few days of the Show were very disappointing, takings were down considerably. The Easter break certainly picked up but we will have to wait for final tallies on our takings and expenses to get a final figure.

A big thank you to all the dedicated volunteers who helped out at *Honeyland* over the 14 days and also to Bruce White the Show Coordinator who has worked tirelessly again this year. Thanks also go to all the packers and beekeepers who generously donated their honey or their time to pack honey. Without these donations of honey and labour *Honeyland* would not be feasible.

It is time for the NSWAA to look very closely at what we are doing at the RAS with *Honeyland*. I believe we need to reinvent *Honeyland* with a fresh outlook. How exactly we do this I am not sure.

I have noticed over the 7 years that I have been directly involved the three major changes we have made seem to have lost their appeal to the public (new stand, honey tasting and the BeeZeebo). There are more questions than answers when discussing this issue and the Executive is keen to hear from anyone with new ideas.

It is hard to justify *Honeyland's* existence just based on money made from the Show; however the value of promotion and exposure to the public in the city of Sydney is enormous and cannot be underestimated, approximately 860 000 people went through the gates over the 14 days.

LLS - I attended a LLS workshop in Glen Innes on 26 February. It was attended by at least 100 people. I raised the issue of the future of the TSR network and the answer was they don't know.

There is currently underway, an internal review regarding TSRs. Casey Cooper and Rob Michie will be attending an industry information meeting in Sydney on the 15 April to raise the issue again. They will also be meeting with NSW farmers on the same day.

AFB workshop – Casey and I travelled to Canberra to attend the AFB workshop on 14 & 15 March. The workshop was very well attended by both industry and government and all believed it was a huge success. A full report is in this edition.

Following on from meetings in NSW Parliament House in November 2012, we received a positive reply from the Minister for Agriculture, Katrina Hodskinson regarding 4 key issues facing the industry currently. Your Executive members are working hard on these issues for a positive outcome. The four issues are: Future of TSRs; Legislation to support AFB control; increased access to National Parks; State Forest issues.

I have received information that a group of small National Parks near Bermagui on the South Coast currently has a new draft management plan out. In this plan of management it clearly states that Beekeeping will be phased out in 3 years. This is a huge concern to the industry and goes completely against the current National Parks policy; NSWAA intends to fight this vigorously.

Conference planning is all but finalised. At this year's Conference we will be celebrating 100 years of beekeeper representation in NSW. The impressive line-up of quality speakers and activities over the week is something that has not been seen in Australia since Apimondia in Melbourne. I urge everyone not to miss out on this premier event.

Finally, I would like to thank the Executive members for their hard work, commitment and cooperation; they have certainly made my job easier this year. To our Secretary Kate McGilvray and Editor Margaret Blunden a huge thank you for your professionalism and dedication throughout the year, it has been a pleasure working with you both.

This will be the last year I stand for the Executive of NSWAA; I would like to thank everyone that I have worked with and the people that have helped me out along the way. My eldest daughter is 7 and I have been on the Executive now for 7 years and I feel my time is up. Most importantly thanks to my family who have put up with me being away chasing Association matters and have supported me all the way.

The Executive would like to see you all at our Conference in Merimbula on 22, 23, 24 May.

Craig Klingner
President

NSWAA PROPOSED CONSTITUTIONAL CHANGES

Current Clause 3(b)
All Apiarists resident in New South Wales and the Australian Capital Territory shall be eligible for Financial Membership provided they have duly completed a Form of Application for Membership setting out the total number of hives of bees owned or controlled by the Applicant. All persons who were Financial Members at 1 June 1933 shall be known as Foundation Members. Ordinary membership is available to individuals, partnerships or companies, providing that only one member of such partnership or company shall have the right to participate in ballots according to the constitutional rules for balloting.

Proposed Clause 3(b)
All Australian Apiarists shall be eligible for Financial Membership provided they have duly completed a Form of Application for Membership setting out the total number of hives of bees owned or controlled by the Applicant. All persons who were Financial Members at 1 June 1933 shall be known as Foundation Members. Ordinary membership is available to individuals, partnerships or companies, providing that only one member of such partnership or company shall have the right to participate in ballots according to the constitutional rules for balloting.

Current Clause 7(a)
The Association shall elect, at each Annual Conference, a Council consisting of five Members, hereafter set out, who shall retire annually but shall be eligible for re-election.
No Member of the Association shall be eligible for election to the Executive Council unless he or she has been a Financial Member for at least two successive years immediately prior to the date of the holding of the Annual Conference at which Nominations, for election, are received.

Proposed Clause 7(a)
The Association shall elect, at its first Annual Conference, a Council consisting of five Members.
No Member of the Association shall be eligible for election to the Executive Council unless he or she resides in NSW or the ACT and has been a Financial Member for at least two successive years immediately prior to the date of the holding of the Annual Conference at which Nominations, for election, are received.
Each member shall be elected for a 2 year term and must retire from office at the Annual Conference held at the end of such 2 year term, but if eligible, may seek reappointment.
At each Annual Conference the number of members of the Executive Council that must retire will be as follows:
- at the Annual Conference held in 2013, two members must retire;
- at the Annual Conference held in 2014, three members must retire

this two year pattern will repeat thereafter.
The members who must retire are those who have held office the longest since last being elected or appointed. If 2 or more members have been in office for the same period, those members may agree which of them will retire. If they do not agree, they must draw lots to decide which of them must retire.

Current Clause 7(b)
The Executive Council elected by Conference shall itself elect its President and Vice-President and the full Council shall then consist of the following:
1. President
2. Vice-President
3. Three (3) Councillors

Subject to this Constitution, the management and control of the Association shall be vested in the Executive Council who may make regulations to govern any matters not directly dealt with in these Rules.

Proposed Clause 7(b)
The Executive Council elected by Conference shall itself elect its President and Vice-President and the full Council shall then consist of the following:
1. President
2. Vice-President
3. Three (3) Councillors

Subject to this Constitution, the management and control of the Association shall be vested in the Executive Council who may make regulations to govern any matters not directly dealt with in these Rules. No member of the Executive Council shall serve more than 5 consecutive years as the President.

Current Clause 9(b)
The rate of the Annual Subscription shall be set at each Annual Conference and shall be calculated on the basis of the Member's ownership or control of hives of bees as follows:

Affiliated/Retired/Student			1 vote
0	to	10 hives	1 vote
11	to	200 hives	2 votes
201	to	400 hives	4 votes
401	to	700 hives	6 votes
701	to	1000 hives	8 votes
1001	to	1500 hives	10 votes
Over		1500 hives	12 votes

Proposed Clause 9(b)
The rate of the Annual Subscription shall be calculated on the basis of the Member's ownership or control of hives of bees as follows:

Affiliated/Retired/Student			1 vote
0	to	10 hives	1 vote
11	to	200 hives	2 votes
201	to	400 hives	4 votes
401	to	700 hives	6 votes
701	to	1000 hives	8 votes
1001	to	1500 hives	10 votes
Over		1500 hives	12 votes
LIFE		maximum number of votes	

Current Clause 9(c)
That the fees be tied to Consumer Price Index (CPI) to the nearest $5.00.

Proposed Clause 9(c)
The Executive has the right to increase subscriptions provided that rise is tied to Consumer Price Index (CPI) to the nearest $5.00.
A vote of Annual Conference is required if a rise greater than CPI is proposed.

Current Clause 10(h)
All questions at Conference, or other meetings may be decided by a show of hands but, on the demand of 12 Financial Members, a Ballot shall be taken in which the voting power shall be on the basis of:

Affiliated/Retired/Student			1 vote
1	to	200 hives	2 votes
201	to	400 hives	4 votes
401	to	700 hives	6 votes
701	to	1000 hives	8 votes
1001	to	1500 hives	10 votes
Over		1500 hives	12 votes

This voting power shall also apply in all polls and postal ballots.

Proposed Clause 10(h)
All questions at Conference, or other meetings may be decided by a show of hands but, on the demand of 12 Financial Members, a Ballot shall be taken in which the voting power shall be on the basis of:

Affiliated/Retired/Student			1 vote
0	to	10 hives	1 votes
11	to	200 hives	2 votes
201	to	400 hives	4 votes
401	to	700 hives	6 votes
701	to	1000 hives	8 votes
1001	to	1500 hives	10 votes
Over		1500 hives	12 votes
LIFE		maximum number of votes	

This voting power shall also apply in all polls and postal ballots.

Current Clause 13(d)
To receive all monies on behalf of the Association and pay the same to the credit of an account in the name of the Association, at such Bank as the Executive Council may direct, such account shall be operated solely by cheque, signed by the Secretary, and one other Member of the Executive Council.

Proposed Clause 13(d)
To receive all monies on behalf of the Association and pay the same to the credit of an account in the name of the Association, at such Bank as the Executive Council may direct, such account shall be operated solely by cheque or electronic banking, signed by the Secretary, and one other Member of the Executive Council.

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AFB WORKSHOP REPORT

An AFB workshop was held at the ANU Canberra on 14 & 15 March 2013. This was an AHBIC initiative and was held with the assistance of RIRDC, PHA and AHBIC. The workshop was facilitated by Mike Williams, Michael Clarke recorded the proceedings and is currently finalising a full report to be circulated to all. The two days involved almost all industry and government players and was believed to be an outstanding success by all participants.

Day one was largely industry led, the first half we heard from industry leaders such as Ian Zadow, Trevor Weatherhead, Rob McDonald, Ben McKee, Trevor Monson and Craig Klingner. The overwhelming message on that morning was that industry does have a big problem with AFB and industry is willing and ready to help lead and pull together a joint industry/government national AFB program.

The second half of the day the attendees broke into small groups and workshopped the critical pros and cons of a national approach to AFB in Australia, then discussed maximising the benefits and managing any risks of a national approach.

By the end of the first day it was very evident that everyone recognised that AFB was a big problem and a better approach to dealing with it was desperately needed. Secondly there was a common notion that the national AFB control program needed to become a major focus of a much bigger National Biosecurity Plan.

The second day we largely heard from speakers from a more government/policy side. Speakers such as Sarah Hilton (DAFF), Greg Fraser and Rod Turner (PHA), Toney Britt (Vic DPI) and Paul Bolger (NZ Ministry of primary industries) among others. The first half of the day there were two key messages. Firstly being that all government departments were increasingly backing away from all endemic pests and diseases and that it was up to industry to deal with them.

The second was that despite governments withdrawing support for issues like AFB, they were all in favour of an industry led and run AFB control program and were very keen to help industry in establishing a program and assisting in areas such as policy, legislation and regulatory backup.

The second half of Day 2 was around the funding options for the proposed national AFB control program. This area was the hardest for the workshop to deal with as there are so many problem areas. Involving the entire industry in all aspects of the proposed AFB control program was seen as a priority. Collecting funds from the entire industry showed to have the biggest issues. Cost of collection for individuals is not economically viable, central collection points are necessary similar to existing levy arrangements.

The issue was largely left unresolved, however a considerable amount of work has been done on this issue in the last 3 weeks involving DAFF and the National Levy collection service and there are some clear was forward.

Paul Bolger gave us an extremely good overview of the NZ AFB program, issues and pitfalls of setting the program up initially, to the continuation of the program and making it work better for the industry.

Both RIRDC and DAFF expressed willingness to assist in seed funding to establish the program, those issues are being pursued at the moment.

The key points to come out of the workshop were:

1. All government departments are/have walked away from AFB control and the issue will be left squarely with industry.
2. All industry delegates recognise AFB was a major problem for the industry and all were in favour of a National approach to AFB control, led, driven and funded by industry.
3. All government departments were in favour of an industry led, driven and funded AFB control program and committed in principle to assisting with policy, legislation and regulatory backup. Especially when the notion of a broader National Biosecurity plan with an AFB focus was brought up.
4. A small working party was put forward to push on with the National AFB Control Program and begin dialogue with all industry associations and state/federal government departments. Ian Zadow (AHBIC), Sam Malfroy (Project Officer PHA) and Craig Klingner (Chairman AHBIC AFB Steering Committee).

In conclusion, I believe the workshop was an outstanding success; all delegates were frank and honest but also cooperative and fully supportive of a national approach to AFB. This exercise and every other one in the past will mean nothing if the issue is not grabbed by industry and made to work. The AFB working party intends to give presentations at all of the upcoming State AGMs, please ask as many questions as possible. At this stage we are looking for in principle support for a national AFB control program from all the states and keeping in mind it is potentially the first steps of a much broader National Biosecurity approach for the industry. I urge everyone to get behind this cause. I strongly believe we have the right people in the right places to make this work for the benefit of the entire industry.

Craig Klingner

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2013 CONFERENCE SPEAKERS

The Executive has invited several overseas speakers to the 2013 Conference. They will include the following:

NURAL COKCETIN

Nural with Shona Blair working on the Honeyland Stand

Nural studied Molecular Biotechnology at the University of Sydney and was awarded BSc, Honours (First Class) in 2007.

Nural became interested in the therapeutic properties of honey as an undergraduate student, when she heard about its long history of use as a wound dressing, and she was particularly interested in the antimicrobial properties of honey. So for her final Honours year thesis Nural decided to examine the effect of honey on problematic pathogens, such as those that cause serious hospital infections and those resistant to antibiotics. Her thesis was very well received and she published some of her findings in an international peer-reviewed journal.

After graduating Nural worked in commercial microbiology for two years, but she missed research and never lost her interest in the medicinal properties of honey. She decided to apply to do further research study, and in 2010 she was awarded an Australian Postgraduate Award and started her PhD at the University of New South Wales.

Currently in her final year of her PhD, Nural is investigating the prebiotic potential of Australian honeys. During this research project she has been looking at the effects of Australian honeys on the growth of the "good bugs" and "bad bugs" in our gut. Her lab results were so promising that she is now involved in the early stages of a clinical trial looking at the impact of eating honey on human gut health.

Nural has given a number of presentations about her research to scientists, doctors and beekeepers, and once she finishes her PhD she hopes to continue investigating the therapeutic properties of honey as a research scientist.

GREG FRASER

Greg is the Executive Director and CEO of Plant Health Australia.

Greg has a diverse background in Australian agriculture having worked in tropical and temperate horticulture, broadacre agriculture, sugarcane, cotton and forestry industries. He has held membership on a number of boards and managed various enterprises in the agricultural, chemical and biotechnology industries. Greg became Executive Director and CEO of PHA in 2008.

Greg will be launching the recently completed Industry Biosecurity Plan (IBP) for the Australian Honey Bee Industry Council. The IBP is a key industry document that will be used by policy makers, decision makers and those responsible for biosecurity risk mitigation in the Australian honey bee industry.

GLENN LOCKE

Glenn is a Senior Food Safety Officer with the NSW Food Authority.

The NSW Food Authority is a State Government agency, established in 2004, to provide New South Wales with an integrated food regulation system. The Authority sits within the Primary Industries ministerial portfolio and is one of the agencies that makes up the Department of Trade and Investment, Regional Infrastructure and Services NSW (NSW Trade & Investment).

Glenn is based in Coffs Harbour and involved in beekeeping off and on since 1980 when his high school agriculture teacher set him up with a Nuc.

Glenn is Secretary of the Mid North Coast branch of the Amateur Beekeepers' Association which has been running for just over 12 months.

He currently manages ten hives and enjoy raising his own queens when possible.

SAM MALFROY

Sam is a Project Officer at Plant Health Australia.

Sam formerly worked for DAFF in the plant exports division, before joining Plant Health Australia in 2011.

Sam now assists in the management of many national honey bee programs, including the National Bee Pest Surveillance Program, the Asian Honey Bee Transition to Management Program, the Varroa Strategy and in developing information for producers, such as the Biosecurity Manual for Australian beekeepers.

Sam will be outlining a range of honey bee programs that PHA are involved in, including the National Varroa Strategy, the National Bee Pest Surveillance Program and the Asian Honey Bee Transition to Management Program.

NSW ANNUAL CONFERENCE

WHEN
22 - 24 May 2013

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Club Sapphire Merimbula

FEATURING KEYNOTE SPEAKERS
Mike Allsopp (South Africa) · Dr Jeff Pettis (USA) · Dr Karyne Rogers (NZ)· Byron Taylor (NZ) · Peter Bray (NZ · Dr Shona Blair · Dr Ben McKee · Karla Hudson · Dr Garry Levot · Dr John Rogers · plus many more industry relevant speakers

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Visit WWW.NSWAA.COM.AU for full conference program and registration details or contact NSW Apiarists' Association 02 6373 1435 info@nswaa.com.au for more information

SESSIONS INCLUDE

- Colony collapse disorder
- Beekeeping in South Africa
- The Saskatchewan honeybee breeding & selection program
- National AFB Management Strategy
- Implementation of NZ AFB strategy
- Making the most out of Australian honey
- Truth in labeling
- Marketing the uniqueness of honey
- Small hive beetles
- Pathogens of asian honey bees
- Honeybee industry biosecurity plan & PHA
- Feeding bees - pros & cons
- Extraction audits
- Theft, vandalism & surveillance
- Future of the Australian honey packing industry
- Asian market potential for Australian honey
- Removing market access barriers from flawed sugar tests
- Prebiotic potential of Australian honeys
- Pests & predators of beekeeping in South Africa
- Cape honeybee problem
- Changing face of varroa
- African bee experience with varroa & AFB
- Banning of Australian bee imports into the US

NEW ZEALAND NATIONAL BEEKEEPERS ASSOCIATION

The New Zealand National Beekeepers Association is celebrating 100 years in June this year and we would like to extend an invitation to Australian Beekeepers to attend our celebrations and Seminars.

For information check on the updates (including accommodation) on our website www.nba.org.nz if you would like to join us in Ashburton in June. Ashburton is 1½ hours from Christchurch Airport.

We begin on Sunday 16th June going through to Wednesday 19th June 2013, and our AGM is on Thursday 20th June. The program is still being progressed and updates when they become finalised will be put on the website.

Linda Bray
Conference Secretary
National Beekeepers Association of New Zealand

While researching earlier Journals we came across the following article and noted your celebrations. The article is an exact copy as written and published in *"The New Zealand Beekeepers Journal."* August 1914.

PLANKS OF THE N.S.W. ASSOCIATION

The New South Wales Apiarists' Association is up and doing, and has invited the co-operation of the New Zealand beekeepers in their endeavours to further their planks. Their principal objects are; - To educate the public re the great food value of honey for all ages, as a food in itself, as compared to other foods, and its many uses medicinally. The Association proposes to offer a prize of 50 guineas, open to residents of Australasia (Australia, New Zealand and Tasmania), for the best article on "Honey as a Food." The statements must be true in fact. The conditions of competition to be drawn up by the Government analysts of New South Wales and Victoria, and their decision to be final. – To obtain the co-operation of all the Departments of Agriculture in Australasia in assisting to make the competition known, etc., and to use and publish widely the articles on honey to help create a greater demand by the public. – To ask the Governments of all the States and of the Dominion of New Zealand to place honey as an article of diet on all the dietaries of all Government public institutions, such as hospitals for insane, benevolent asylums, and so forth, and on the dietary of the Army and Navy. -To ask the various Governments to establish certain standards for honey as to quality, and to define the same-To procure united action right throughout Australasia against all bee diseases, and especially foulbrood. – To Secure special cheap postal rates for honey as for fruit.-To see that competent judges are appointed in connection with Agricultural Shows.- To endeavour to get effective non-poisonous sprays wherever possible used on fruit trees for the protection of bee life.- To advocate the preservation of native trees wherever it is possible, and the reservation of all forests on lands useless for agricultural and pastoral purposes.-To arrange a conference of apiarists of all Australasia to discuss all matters of interest to bee-masters.

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NICK'S NEWS
from DPI NSW

Nick Annand
Livestock Officer (Bees), NSW Department of Primary Industries, Bathurst
Ph: 02 6330 1210 Email: nicholas.annand@dpi.nsw.gov.au

DPI UPDATE

Changes are continuing within the DPI and the services we provide to the public. Currently many of my work colleagues have to apply for new positions within NSW DPI or the Catchment Management Authority (CMA) which will be later changed into the Local Land Services (LLS) at the start of next year. Good luck to all. Compared with many other agricultural industries where there will be major changes in the way services will be delivered by NSW DPI to the public, it is suspected the bee industry may experience little variation to the current way things are done by the staff. It will remain with two specialists in honey bees. My position will be getting a name change from being a Livestock Officer - bees to become a Development Officer – Bees while Doug's will remain as a Technical Specialist - Bees. Similarly there is little to no changes in relation to the Regulatory Staff who deal with honey bee regulations.

BEETLE CONFUSION

Over the years I have had a few beekeepers tell me they are seeing small hive beetle (SHB) in other locations than just in the honey bee hive or related honey bee material. A common spot is the compost pile/bin /worm farm. Often I request for the beekeeper to collect a sample and submit it. I am interested in finding out if small hive beetle are living and breeding in any places other than the honey bee hive or related equipment. One location where SHB have been identified and found breeding has been in stingless bee colonies. These native bees are capable of managing SHB incursions when the colonies are strong. They either drive the SHB from the colony or glue the beetle down with resin and cerumen, a resin/wax mix the bees produce for structure forms in the colony. The invading SHB that has been glued down then gets covered by more resin and cerumen and die soon after. Occasionally the SHB will survive and cause slime outs to native bee colonies. It is suspected this usually occurs if the colony is weak or heavily stressed. These colonies are far less attractive to the SHB than European honey bee colonies. Other than this I have yet to positively confirm any other locations where SHB have living and breeding in the environment.

I have had reports of SHB in a variety of different situations including in banana palm stems, silage and in flowers, particularly hibiscus. Some of these reports have either come back as negative to being SHB or samples where never taken. So please if you ever see SHB or suspect SHB, adult or pupae, living and breeding on something not related in some way to a bee colony or equipment please collect and submit samples to me to investigate further. It would be good to know if SHB do live and breed on alternative food resources. So far the evidence suggests not if honey bee colonies are locally available.

Having had samples given to me on a few occasions of suspected SHB from compost bins which I could rule out as SHB, I decided to get some identified. A hobbyist beekeeper from Epping kindly submitted some suspect SHB from his worm farm and from flowers in his garden which I got identified.

There were two different types of beetles both which looked similar to SHB.

Aethina concolor. Macleay - common name Hibiscus flower beetle (picture from CSIRO website) is a close relative to thE SHB.

The beetle picture above looks very similar to SHB - *Aethina tumida.* Murray and are in the same genus of beetles which is indicated by the scientific name. The main difference is this beetle is generally slightly smaller in size than SHB and the round club at the end of the antennae is smaller relative to their body size. This beetle is native to Australia. These beetles as the name suggests are commonly found on hibiscus flowers often being the cause of holes in the petals but can be founds on other types of flowers including cucurbits, dahlia and morning glory. They feed predominantly on the pollen.

The second beetle was thought to be *Hister walkeri.*

Thought probably to be *Hister walkeri* ? These beetles were collected out of a worm farm. Green lines along the top are millimetres. Sorry about the photograph quality.

The Hister beetles are a family with a diverse range of beetle with over 3900 type's world wide. These beetles have shiny elytra. The main distinguishing feature of this beetle compared to SHB is that the elytra, the hard shell like wing casings, cover the abdomen completely whereas on SHB the abdomen protrudes past the elytra.

There are many different types of beetles in the environment which can be easily confused with the SHB. I have shown you just two types which are commonly mistaken. So please feel free to submit samples or ring to discuss any situations where you think you may have found SHB living and or breeding away from bees or bee equipment. If unsure please collect samples take photographs etc and we can do the identification for you.

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DOUG'S COLUMN

Doug Somerville
Technical Specialist, Honeybees - NSW Department of Primary Industries - Goulburn
doug.somerville@industry.nsw.gov.au

AFB – "not my problem?!"

Most readers should be aware of what AFB stands for. Just in case you don't, it is the acronym for American Foulbrood. It is a spore forming bacteria that in most cases eventually kills any colonies that become clinically infected.

Historically, state governments have legislated for this disease, paid for specialist staff to produce education material and provide training to beekeepers and inspection services of beekeepers' beehives. There has been a fundamental shift by state governments across Australia to review this level of service.

AFB does not affect the environment, it does not affect public health and it could be argued that it does not affect trade in honey. Honey packers in Australia, as a rule, do not discount honey with AFB spores. Trade, environment and human health are without doubt government concerns. On the other hand, AFB only impacts on beekeepers. The presence of AFB in beehives in certain horticultural areas deters some beekeepers from providing a pollination service.

The role of government at least in NSW is to help industry help itself. The current arrangement and approach to AFB is not working, so what does the beekeeping industry do?

Many beekeepers have been dealing with and adequately controlling the impact of AFB on their beekeeping operations for decades, but some have not. In the position I sit within the industry I have seen many examples of total neglect and careless beekeeping practices where well managed beehives within flying distances of these cases invariably become infected and die. This creates a major economic burden for beekeepers affected by other careless beekeeping operations.

A national workshop on the future management of AFB was held in Canberra on 14th and 15th March 2013. Delegates from various state governments, beekeeping industry representatives and honey packers, researchers, consultants and Federal government entities were involved in the two-day event.

Some of the key points I recorded in my notes were:

- Fiscal pressures for each state government to reduce services.
- There have been countless motions at beekeeping industry conferences about AFB.
- There have been quite a considerable number of previous workshops and talk fests dealing with AFB.
- So far, all attempts at reform and progress on the subject of AFB have failed.
- Mounting evidence that the prevalence of the disease has been increasing for the past 15 years.
- Elements of the beekeeping industry continue to consider AFB as a government problem when the very clear message is that government regards AFB as an industry problem.
- Since 1998 the reviews and workshops on the subject of AFB all recommend a national approach to the disease.
- A lot of negativity associated with AFB.
- There are next to no barriers with selling honey containing AFB spores, not a legitimate trade barrier.
- The consumer is extremely sensitive to negative publicity on contaminants in honey.
- There is a general desire and push by state governments to harmonise legislation across states and some examples were provided.
- Role of governments should be in exotic diseases surveillance and responding to emergencies
- Beekeeping industry strengths include:
    - passionate industry players
    - strong positive public profile
    - Varroa free
- Beekeeping industry weaknesses include:
    - high number of unregistered beekeepers
    - strong feral bee population
    - hives are moved long distances
    - very few commercial incentives to encourage containment of endemic diseases
- Industry engagement in the Victorian AFB smart program was disappointing, with a maximum of 55% participation
- Government priority investment in biosecurity and expected economic returns:

Prevention	1:100
Eradication	1:25
Containment	1:5-10
Asset-based protection	1:1-5

  (The dollar return for government investment is far superior for prevention strategies than asset-based protection strategies).
- In New Zealand the government funds 50% of the national beekeeping registration system for exotic disease surveillance and response reasons. The beekeeping industry funds 50% for the purposes of facilitating the national AFB strategy.

The agenda for the two-day national AFB workshop in Canberra in March included the normal welcome and introductions with presentations on the need for a national approach to this disease. After morning tea, various talks were presented on the impact of the disease by representatives of the beekeeping industry across Australia. Some degree of frustration was expressed by Victoria that the government was walking away from AFB. A small group exercise was conducted after lunch exploring the strengths, weaknesses, opportunities and threats to a national approach to AFB in Australia.

Paul Bolger from the NZ government outlined what the process in that country had been with the transition from a government to industry managed AFB program. Paul reiterated that this was a major accomplishment for the NZ beekeeping industry with several key players putting in many hours of meetings and negotiations between government and industry. Sarah Hilton from the Australian Chief Plant Protection Office in the Department of Agriculture, Fisheries & Forestry (Federal government) indicated their support for a national approach to a disease like AFB and Plant Health Australia indicated their willingness to be involved in the establishment and management of a national program.

Possible funding options were discussed after lunch on the second day. This discussion remained without conclusion as there was no ideal solution to this vexatious issue. The primary problem was that the cost of collecting funds is expensive. To encourage smaller beekeepers

to be engaged in the program, the fee would need to be affordable. The cost of collecting such fees was said to range from $25 to $40 per transaction. Past studies of beekeeping in NSW have estimated that there are in excess of 1,000 unregistered beekeepers in our state alone. The administration costs for including recreational beekeepers in a national cost sharing AFB program is problematic. An increase in the honey levy seems likely although as stated, this issue remained unresolved and needs to be further explored.

The key outcomes of the workshop, I thought, were:

1. All beekeeping industry delegates supported a national approach to AFB.
2. All government representatives were supportive of the beekeeping industry taking ownership over this endemic disease.
3. Three key players were identified to take the issue forward, including Craig Klingner (President, NSW Apiarists' Association), Ian Zadow (AHBIC committee member) and Sam Malfroy (Project Officer, Plant Health Australia).
4. The Honey Bee Committee in the Rural Industries Research and Development Corporation indicated their willingness to consider any funding proposals to help establish an AFB national program.
5. DAFF (Department of Agriculture, Fisheries and Forestry - Canberra) expressed their desire to help the industry with a national approach to AFB, with funds to assist in its establishment. This was on the proviso that DAFF received a business plan from the industry before the end of June.

The main weaknesses as I see it for the momentum to slow will be:

* getting bogged down in the detail of what is a priority for the construction of a national program,
*. establishment of a suitable funding model, which all parties see as fair and equitable, that is able to collect sufficient money to conduct a worthwhile program.

The strengths of the current momentum are:

* strong beekeeping industry support for actions on AFB,
* Federal and State governments willing to assist in the transition of management of AFB to industry.

Back to the heading of this article, *AFB – "not my problem?!"* It was made very clear at the workshop that the various state governments do not regard AFB as their responsibility anymore and no amount of letters to the minister, or motions at conferences are going to change this view.

NSW has been very active in the AFB management area:

- The Regulatory Officer task force exercises led by Mick Rankmore
- Several Primefacts on AFB
- Pest and Disease courses conducted by Nick Annand and myself
- 7 videos on AFB management
- The latest product – the "Glove Box Guide to AFB" sent to all registered beekeepers in NSW, November 2012.

This list of products and services to beekeepers in NSW from the DPI is far superior to any other state. Ironically, it is probably as a result of the efforts of NSW DPI that there are still many beekeepers that are of the belief that AFB is a government problem to manage.

It's time to reconsider this view!

NEW MEMBERS

A warm welcome to the following new members:

Phillip Adams	Forbes
Richard Adams	Bungendore
David Blues	Fairlight
James Collins	Bega
Roger Easton	Fennell Bay
Jeffrey Fletcher	Buttai
Anthony Gamble	Jindabyne
Donald Gowing	Coffs Harbour
Michael Graham	Redhead
V Harrington	Bolton Point
John Knox	Glen Innes
Tom Sharman	Broulee
Matthew Skinner	Darlington Point
Raelene Michie	Moore Creek
Col Sandeman	Kotara

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2013 Conference & AGM

When:	Tuesday 21 May
Where:	Sapphire Club 119 Main St Merimbula NSW 2548
Time:	08.30am Registration
Speakers:	Auditing of Pollination Hives Pollinating in NT Cotton Industry update Bayer pesticide update Food security for increasing Asian population *(All to be confirmed)*

Cost: $60.00 if you pre-register (pre-registration form will be in mail out early April 2013), @ aussiepollination.com.au and $70.00 for registration on the day and for non members.

CONFERENCE 2013 BUS TOURS

The Southern Tablelands Branch is organising tours in conjunction with the 2013 Conference

Thursday 23 May - BUS to Bega, Cobargo, Tathra, Bega Cheese factory, Winery, Lavender Farm & shopping

Friday 24 May - BUS & CRUISE EDEN - 2 hr Bay cruise $20.00 incl M/T or town attractions + SHOPPING in Eden & Pambula

Bus travel both days $20-25 depending on numbers
Lunches etc at your own expense.

Contact Peter for more information:
Ph:0429 702 450 evenings or
Email: pldoyle60@gmail.com

NSW CONFERENCE PROGRAM
Club Sapphire, Merimbula
22 - 24 May 2013

DAY 1 - Wednesday 22 May 2013	
9.00am	NSW Apiarists' Association AGM, AHBIC & RIRDC Industry Reports **Craig Klingner, Lindsay Bourke, Dr Michael Hornitzky**
10.15am	Official Opening **Alby Schultz - Federal Member for Hume**
10.30am	**MORNING TEA**
11.00am	Changes at NSW DPI and the impact on industry of the new Local Land Services **Tim Burfitt**, *Manager Intensive Livestock Industry Development, NSW DPI*
11.15am	NSW Department of Primary Industries Reports **Dr Doug Somerville, Mick Rankmore**
11.40am	AFB National Management Strategy **Craig Klingner**
11.50am	Implementation of the NZ AFB pest management strategy **Bryon Taylor - Apiculture Officer AsureQuality NZ**
12.30pm	**LUNCH**
2.00pm	An overview of beekeeping in South Africa **Mike Allsopp** - Browns Bees Australia Visiting Speaker, *Senior Researcher and Head of Honeybee Research Section,* Agricultural Research Council, Stellenbosch, South Africa
2.45pm	Colony Collapse Disorder **Dr Jeff Pettis -** Capilano Visiting Speaker, *Research Leader* Bee Research Laboratory, Agricultural Research Service, United States Department of Agriculture
3.15pm	Theft and vandalism in the bee industry **Detective Senior Constable Phil McCloskey** NSW Police Force
3.30pm	Why surveillance could be a good idea for your business **Glenn Shean**
4.00pm	The Saskatraz Project: The Saskatchewan Honey bee breeding and selection program **Albert Robertson -** Canadian Bee Breeder - via video presentation
4.30pm	General Business
6.00pm	**BBQ Event - sponsored by Santos Limited**

Note: The NSW Apiarists' Association reserves the right to alter the conference program at any time – for full details visit: www.nswaa.com.au

NSW CONFERENCE PROGRAM
Club Sapphire, Merimbula
22 - 24 May 2013

DAY 2 - Thursday 23 May 2013	
9.00am	Making the most out of Australian honey **Dr Shona Blair,** *Chief Executive Officer T*he Wheen Bee Foundation
9.30am	The future of the Australian honey packing industry **Dr Ben McKee,** *Chief Executive C*apilano
10.00am	Asian market potential for Australian Honey **Karla Hudson,** *General Manager* Superbee Honey Factory
10.30am	**MORNING TEA**
11.15am	Truth in labelling **Glenn Locke**, *Senior Food Safety Officer* NSW Food Authority
11.30am	Removing market access barriers from flawed sugar tests **Dr Karyne Rogers,** *Senior Scientist - Environmental Isotopes, Outreach Scientist and Te Pap Scientist-in-Residence,* National Isotope Centre, New Zealand
12.00pm	Marketing the uniqueness of honey **Peter Bray**, *Managing Director* Airborne Honey Limited - Supported by Weerona Apiaries - Neil Bingley
12.30pm	**LUNCH**
2.00pm	The prebiotic potential of Australian honeys and what that means for industry **Dr Nural Cokcetin,** *PhD Candidate* School of Biotechnology and Biomolecular Sciences University of NSW
2.30pm	Pests and predators of beekeeping in South Africa **Mike Allsopp** - Browns Bees Australia Visiting Speaker *Senior Researcher and Head of Honeybee Research Section,* Agricultural Research Council, Stellenbosch, South Africa
3.00pm	Small hive beetles – Why Apithor? **Dr Garry Levot,** *Principal Research Scientist, Microbiological Diseases and Diagnostics Research* NSW Department of Primary Industries
3.30pm	Pathogens of Asian honey bees **Dr John Roberts,** *Bee Scientist* CSIRO
4.00pm	Marcus Oldham College **Jay Hughes,** 2012 Marcus Oldham Scholarship recipient
4.10pm	General Business
5.30pm	**WINE & CHEESE NIGHT** - sponsored by Ecroyd Beekeeping supplies

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NSW CONFERENCE PROGRAM
Club Sapphire, Merimbula
22 - 24 May 2013

DAY 3 - Friday 24 May 2013	
9.00am	Feeding bees - the pros and cons **Dr Karyne Rogers,** *Senior Scientist - Environmental Isotopes, Outreach Scientist and Te Pap Scientist-in-Residence* National Isotope Centre, NZ
9.30am	Extraction audits **Byron Taylor,** *Apiculture Officer, A*sureQuality NZ
10.00am	The Cape Honeybee Problem **Mike Allsopp -** Browns Bees Australia Visiting Speaker, *Senior Researcher and Head of Honeybee Research Section* Agricultural Research Council, Stellenbosch, South Africa
10.30am	**MORNING TEA**
11.15am	New Zealand industry past and present **Peter Bray,** *Managing Director* Airborne Honey Limited - Supported by Weerona Apiaries - Neil Bingley
11.45am	Banning of Australian bee imports into the US **Dr Jeff Pettis -** Capilano Visiting Speaker, *Research Leader* Bee Research Laboratory, Agricultural Research Service, United States Department of Agriculture
12.00pm	Speaking with a Strong Voice - Building and Maintaining Successful Industry Representation **Greg Mills,** *Livestock Officer Industry Development (Economist)* NSW Department of Primary Industries
12.30pm	**LUNCH**
2.00pm	Honeybee Industry Biosecurity Plan **Greg Fraser,** *CEO and Executive Director* Plant Health Australia
2.15pm	Plant Health Australia and the Australian Honeybee Industry **Sam Malfroy,** *Project Officer* Plant Health Australia
2.45pm	The African Bee experience with varroa and AFB in South Africa **Mike Allsopp** - Browns Bees Australia Visiting Speaker *Senior Researcher and Head of Honeybee Research Section,* Agricultural Research Council, Stellenbosch, South Africa
3.30pm	The changing face of varroa **Dr Jeff Pettis -** Capilano Visiting Speaker, *Research Leader* Bee Research Laboratory, Agricultural Research Service, United States Department of Agriculture
4.00pm	General Business
7.00pm	**ANNUAL CONFERENCE DINNER -sponsored by WFI**

Note: The NSW Apiarists' Association reserves the right to alter the conference program at any time – for full details visit: www.nswaa.com.au

Bee Trade Show 2013

22- 24 May 2013

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QUEEN GRAFTING DAY

The NSWAA Sydney Metropolitan Branch held a "Queen Grafting Day" on Sunday 10 March at the Wheen Foundation property at Richmond.

A sunny morning welcomed 14 Sydney Branch members and 11 members from the Sydney and Central Coast Amateur Associations. It was gratifying to see parents bring their teenagers along and their desire to get into bees.

Bruce White gave the most succinct explanation of the queen cell building cycle I have ever seen and then proceeded to demonstrate three cell raising methods. All participants were encouraged to try grafting and be given a success rating by Bruce.

We thank the Wheen foundation for permission to use their property and bees and Dr Shona Blair, the Foundation's new Executive Director, for her support. This property has much potential for us in diplomacy and advocacy to the apiary community if we encourage and support it.

Paul Drew
Acting Secretary
NSWAA Sydney Branch

THANK YOU SHOW VOLUNTEERS

Many thanks to all the volunteers who helped out at the Honeyland Stand and to those beekeepers who participated in the live bee demonstrations.

STAND VOLUNTEERS
Bruce White, Brett Bingley, Neil Bingley, Doyle Egelhoff, Paul Drew, Margaret Blunden, Geoff Manning, Liane Colwell, Andrew Wight, Wayne Hammond, David Cowling, Lynn White, Doug Purdie, Craig Klingner, Teresa Klingner, Kevin Haswell, Arthur Lucas, Brian Woolfe, Don Knox. Beatrice Chew, Heidi Dokuilil, Reg Marsh, Bill Weiss, Carl Cooper, Ken Jackson, Lurline Tanner, Cate Burton, Shannon Schmidt, Neil Peadon, Rhonda Smith, Jenny Farrell, Tamara Mantchakidi, Lisa Farrell, Rosemary Doherty. Irwyn Doherty, Dave Wilson, Juanita Di-Angelo, Joy Hood, Lamorna Osborne, Bill Dick, John Patterson, Shelia Stokes, Warwick Smith, Casey Cooper, Harold Saxvik, Judy Saxvik, Enid Whitby, Eric Whitby, Debbie Porter, Malcolm Porter, Christina Bacchellia, Nural Cocketin, Seda Cocketin, Shona Blair, Su An G, Bruce Hughston, Lee Hughston, Belinda Hughes, Tony Gordge, Cate Rendell, Laurie Kershaw, Therese Kershaw, Matthew Kershaw, James Kershaw, Steph Robertson, Rob Michie, Raelene Michie, David Lord, Cecilia MacDonald, Sheryl McIntosh.

LIVE BEE DEMONSTRATION VOLUNTEERS
Casey Cooper, Bruce White, Brian Woolfe, John Knox, Craig Klingner, Reg Marsh, Geoff Manning, Harold Saxvik, James Kershaw, Laurie Kershaw, Rob Michie, David Lord, Doyle Egelhoff, Matthew Kershaw, Geoff Manning.

The Association appreciates your help as without it we would not be able to take part in the Show.

Bruce & Lynn White at the RAS Awards Dinner

RAS AWARDS DINNER

On the 24 March the Royal Agricultural Society honoured Noel & Barbara Bingley with an Award for showing honey consistently for 35 years. They travelled to Sydney to attend an Awards Dinner at the Showground.

Bruce White was another recipient of an Award for his contribution to the Show.

Both awards were presented by RAS Councillor, Mr Michael Arnott.

Congratulations to Noel, Barbara & Bruce on well deserved recognition.

The National Honey Show is growing steadily every year and it was pleasing this year to see many commercial entries.

Bruce receiving his award from Couuncllor Michael Arnott

Noel & Barbara Bingley with their RAS Award

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INTERNATIONAL NEWS

HEAVY METAL BOTHERS BUMBLEBEES

Courtesy: Catch the Buzz

PITTSBURGH USA - Beekeepers and researchers nationally are reporting growing evidence that a powerful new class of pesticides may be killing off bumblebees. Now, research at the University of Pittsburgh points toward another potential cause: metal pollution from aluminium and nickel.

Published in the journal *Environmental Pollution*, the Pitt study finds that bumblebees are at risk of ingesting toxic amounts of metals like aluminium and nickel found in flowers growing in soil that has been contaminated by exhaust from vehicles, industrial machinery, and farming equipment. The Pitt study finds that bumblebees have the ability to taste—and later ignore—certain metals such as nickel, but can do so only after they visit a contaminated flower. Therefore, the insects are exposed to toxins before they even sense the presence of metals.

"Although many metals are required by living organisms in small amounts, they can be toxic to both plants and animals when found in moderate to high concentrations," said Tia-Lynn Ashman, principal investigator of the study and professor and associate chair in Pitt's Department of Biological Sciences in the Kenneth P. Dietrich School of Arts and Sciences. "Beyond leading to mortality, these metals can interfere with insect taste perception, agility, and working memory—all necessary attributes for busy bumblebee workers."

Ashman and George Meindl, co-author of the study and a PhD candidate in Ashman's lab, studied bumblebee behaviour using the *Impatiens capensis*, a North American flower that blooms in summer. Its flowers are large, producing a high volume of sugar-rich nectar each day—an ideal place for bumblebees to forage. The blooms were collected from the field each morning of the two-week study and were of a similar age, colour, and size.

To determine whether nickel and aluminium in the flowers' nectar influenced bumblebee behaviour, Ashman and Meindl used two groups of uncontaminated flowers, one group of flowers contaminated by nickel, and another contaminated by aluminium. When a bumblebee visited a flower in an array, the entire visitation was recorded as well as the time spent (in seconds) foraging on each individual flower. This included monitoring whether the bee moved from a contaminated to a noncontaminated flower, whether the bee moved to the same group it had just sampled, or whether the bee left the flower group without visiting other individual blooms. Following each observed visit, all flowers in the array were replaced with new flowers, to ensure accurate results.

"We found that bees still visited flowers contaminated by metal, indicating that they can't detect metal from afar," said Ashman. "However, once bumblebees arrive at flowers and sample the nectar, they are able to discriminate against certain metals."

In the study, the bees were able to taste, discriminate against, and leave flowers containing nickel. However, this was not the case for the aluminium-treated flowers, as the bees foraged on the contaminated flowers for time periods equal to those of the noncontaminated flowers.

"It's unclear why the bees didn't sense the aluminium," said Meindl. "However, past studies show that the concentrations of aluminium found throughout blooms tend to be higher than concentrations of nickel. This suggests that the bees may be more tolerant or immune to its presence."

These results also have implications for environmentally friendly efforts to decontaminate soil, in particular a method called phytoremediation—a promising approach that involves growing metal-accumulating plants on polluted soil to remove such contaminates. Ashman says this approach should be considered with caution because the bees observed in the study foraged on metal-rich flowers. She states that further research is needed to identify plants that are ecologically safe and won't pose threats to local animals that pollinate.

MEASURING THE BUZZ IN THE HIVE

By Alan Harman

Honey bees may soon be able to communicate their poor health to beekeepers as a result of major new UK research project that aims to transform beekeeping and halt the decline of the sector in Europe.

A consortium – led by Nottingham Trent University and the Bee Farmers Association of the UK (BFA) – has launched a €1.4-million (US$1.8-million) European Union-funded study to monitor and decode the buzzing of bees in the hive and pass crucial information to beekeepers via wireless technology.

The research also involves the European Professional Beekeepers Association in Germany and the National Institute for Agricultural Research in France.

The researchers have developed a hi-tech method of using accelerometers – devices sensitive to minute vibrations – to detect and translate the vibrations caused by bees during their activities and as they communicate with one another.

This means the researchers now can monitor when a hive is about to swarm and as a next step they are investigating changes and patterns in buzzing which may indicate specific health disorders, or deterioration in the hive.

They are developing methods to transfer wirelessly instant alerts to the beekeeper, either via email or SMS, so that they can intervene and manage their colonies.

The research is expected to significantly improve the efficiency of beekeeping, making it far less time-consuming and costly, as well as improving the health monitoring of the honeybee.

Beekeeping requires physical visits and regular inspections of every single hive by Europe's 600,000 beekeepers who have to nurture their bees, regardless of conditions.

Beekeeping generates more than €400 million (US$520.8 million) a year in Europe, but only 54% of the total demand for honey and other bee products is produced on the continent.

Bee populations and beekeeper numbers in Europe have been falling at an alarming rate and honey imports to the EU, from countries such as Argentina and China, have risen by 20% since 2001.

"Despite its importance and the obvious potential for growth, serious problems face the beekeeping sector," Nottingham Trent University physicist and researcher Martin Bencsik says.

"Action to bring modern management tools to beekeeping and action to halt the decline of the European beekeeping sector is urgently needed, particularly as bees play such a vital role in agricultural productivity. We now have the potential to achieve this.

"Our tool will allow us to remotely diagnose colony status without the need for systematic invasive opening of individual hives for inspection. Commercial beekeepers will be able to keep more hives over greater geographical distances, which will both increase their efficiency and profitability."

BFA research and administration officer David Bancalari says this could be the golden hour for bee farmers.

"For years we have been struggling to improve the health of our bees," he says. "We know early intervention is crucial.

This research could give us those vital, lifesaving early signs of problems allowing us to tend to our bees much sooner – giving us the equivalent of the golden hour in human first aid."

LASER DEVICE UNMASKS COUNTERFEIT HONEY

When someone mentions counterfeiting, it brings up images of money, watches or DVDs. It certainly doesn't make honey spring to mind, yet honey smuggling and counterfeiting is an international problem involving hundreds of millions of dollars. In an effort to combat this, the European Space Agency (ESA) is funding a demonstration project to adopt lasers designed to study the Martian atmosphere, to detect fake honey.

The United States consumes 400 million pounds (181 million kg) of honey per year, of which 53 per cent is imported. In recent years, smuggled and counterfeit honey has become a major problem in the US and the EU. Mainland China has been the source of large quantities of honey contaminated with lead and illegal antibiotics that is illegally transhipped through India and relabelled before going on. Some of this honey isn't even honey, but a mixture of a small portion of real honey adulterated with sugar water, malt sweeteners, corn syrup, rice syrup, jaggery, barley malt sweetener, beet syrup or other additives. Similar problems occur with other foods, such as olive oil, chocolate and saffron.

One way of identifying such smuggled and counterfeit honey is by pollen analysis, which can pinpoint its origin based on the flowers the bees visited, but the Chinese often ultra-filtrate their honey to remove these traces. A method less easy to dodge is to study the isotope ratios of the atoms that make up the honey. Different ratios indicate where the honey came from and its composition, so both smuggled and fake honey can be detected. Take a sample of the honey, burn a few milligrams and measure the isotopes of carbon dioxide that it gives off to get the answer.

The tricky bit is coming up with equipment for measuring isotopes that's both sensitive enough for the job, yet portable enough that samples don't need to be sent back to a central laboratory. The answer to this problem came from, of all places, Mars.

Seven years ago, Britain's Rutherford Appleton Laboratory (RAL) began development of a laser that could be used to hunt for methane in the atmosphere of the Red Planet. The result was the laser "isotope ratio-meter," which is sensitive enough for isotope analysis using tuneable infrared lasers on very small samples, yet lightweight and compact.

"You take a laser, whose optical frequency or 'colour' can be continuously adjusted, beam it at a gas sample, and detect the level passing through the gas," said Dr Damien Weidmann, Laser Spectroscopy Team Leader at RAL Space. "Each molecule, and each of its isotopic forms, has a unique fingerprint spectrum. If, on the other hand, you know what you are looking for, you can simply set the laser to the appropriate frequency."

Though it hasn't yet flown in space, the laser is being turned toward the identification of fake food through funding from ESA for a Technology Transfer Demonstration project.

The laser isotope ratio-meter, which is being used to detect counterfeit honey

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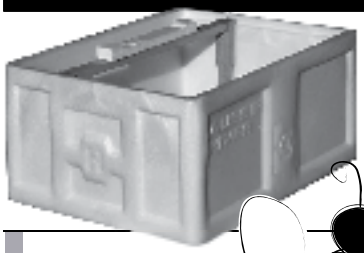

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SICK BEES

PART 14

UPDATE ON THE "NOSEMA COUSINS"

by Randy Oliver - ScientificBeekeeping.com

In my last article, I described how to quickly sample for nosema. So what do the spore counts actually mean as far as colony health is concerned? I wrote an article a little over two years ago with the tongue in cheek title "*Nosema ceranae*: Kiss of Death, or Much Ado about Nothing." Well, *N. ceranae* is still an enigma, but it appears that the answer lies somewhere in between.

Dr. Mariano Higes (2005, 2006) was the first to raise the flag to alert beekeepers worldwide that a new species of nosema had invaded Europe, and appeared to be the cause of the unusual colony collapses that plagued Spain (a major beekeeping country) in 2003 and 2004. Then in 2007, just as Colony Collapse Disorder was rampaging through our own bee operations, we found out that *Nosema ceranae* had somehow spread throughout the U.S. right under our eyes!

Drs. Diana Cox-Foster and Ian Lipkin (2007) then published a paper suggesting that a newly-described virus was involved in CCD, but later research indicated that IAPV wasn't the only culprit, leaving *N. ceranae* as a leading suspect.

Shortly afterward, Higes (2008) described in great detail the progression of *N. ceranae* infection (in his Spanish apiaries) through four stages: Asymptomatic, Replacement, False Recovery, and finally the dreaded Depopulation. The logic, the numbers, and the devastating final result were all clear and compelling. The specter of *N. ceranae* ravaging our hives resulted in unnerved beekeepers boosting the sales of fumagillin to the point that supplies ran short.

I had never previously worried about nosema, but I pulled out a microscope and found out that *N. ceranae* was indeed widespread in my operation. I ran trials, and found out that the danged parasite could flourish despite being drowned in fumagillin (Oliver 2008a), but more surprisingly, that colonies here at Comedy of Errors Apiaries thrived despite exhibiting spore counts in the millions. To try to reconcile the differences between the very different outcomes of *N. ceranae* infection in my operation with those reported for Spain, I began an ongoing correspondence with Dr. Higes, which continues to this day.

To be frank, some other Spanish researchers dispute Higes' conclusions (debate leads to better science), so I have often questioned and challenged him on details of methodology and interpretation, which he and his team of collaborators have generally clarified with additional research. In this series of articles I will be citing a number of the Higes team's papers, since they have clearly led the pack in *N. ceranae* research, meticulously investigating nearly every aspect of this pathogen's effects upon bees.

I've previously written at length about *N. ceranae* in my "Nosema Twins" series (all available at ScientificBeekeeping.com), but feel that there has been so much recent research completed that it would benefit the reader for me to write a digest of our current state of knowledge. I've scoured the literature for every relevant research paper (including a number still in press), and have discussed as well current findings with many of the world's nosema researchers. I wish that at this time I could say that I have the answers to all your questions about *Nosema ceranae*, but unfortunately, in many aspects this parasite still remains an enigma.

WORLDWIDE STATUS AND DISTRIBUTION

Nosema ceranae has now spread into the European honey bee populations of most areas of the world, roughly concurrent with the spread of varroa (and its altering of virus dynamics), which greatly confuses analysis of the effect of these two novel parasites upon bee health. It is difficult to tell in which countries *N. ceranae* has already reached equilibrium, and in which it is still invading.

Since the first invasive wave of a novel parasite into naïve hosts is generally that most damaging, it would be helpful to know when *ceranae* actually arrived in various countries. For example, we know from analysis of archived bee samples that *N. ceranae* has been present on the East Coast for at least two decades (Chen 2008). Unfortunately, any initial effects of its invasion may have been masked by our focus upon the massive impact of the arrival of varroa at about the same time.

Since no one was looking for *N. ceranae* in the U.S. until 2007, we obviously didn't start studying it until long after it was well established and likely homogenized throughout the bee population via migratory beekeeping practices. And it is also likely that by the time we started studying the impact of *N. ceranae* upon the health of colonies, natural selection may have already weeded out the bees least tolerant of the emergent pathogen.

In Europe, however, *N. ceranae* only recently invaded bee populations already suffering from varroa and viruses, miticide failure and comb contamination, extreme weather events, plus changes in agricultural practices and pesticide use—the combination of which likely factor into colony losses in that region.

In a fresh study (Botías 2011), the Higes team analyzed archived Spanish honey samples (frozen) and adult bee samples (in alcohol) dating back to 1998. They found that *N. ceranae* first appeared beginning in 2000 and increased in prevalence through 2009 (the latest samples analyzed), concurrent with a decrease in the prevalence of *N. apis*. It is noteworthy that Spain concurrently suffered from devastating drought during much of that period, which led to serious colony stress.

N. ceranae is still in the process of extending its range worldwide, and appears to be most successful in warmer climates. It is of interest that in varroa-free Australia, its invasion does not appear to be causing significant colony losses. Interestingly, although it is well-established in Canada, it is not yet common in some northern European countries, but this may be due to restrictions upon bee imports (Fries 2010).

N. ceranae is widely distributed throughout the U.S., but surprisingly, there were great differences in the percent of colonies infected in a recent state-by-state survey (Fig. 1).

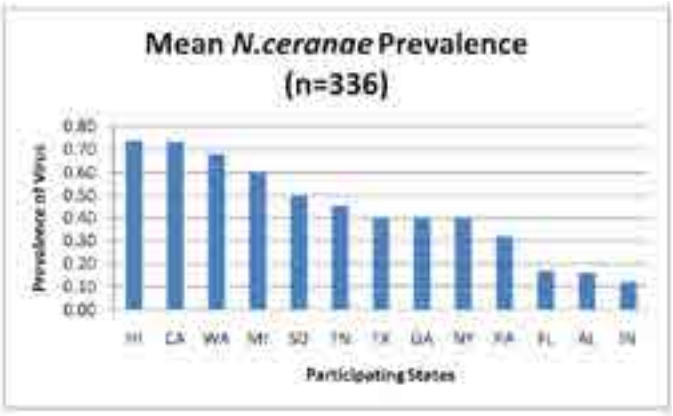

Figure 1. Prevalence (percent of samples infected) of *N. ceranae* in various states as determined by PCR analysis (more sensitive than spore counts) of aggregate samples collected from 8 randomly selected colonies per apiary, 4 apiaries per state. Note that in some states over 70% of samples were infected! From Rennich, K, et al (2011) 2010-2011 National Honey Bee Pests and Diseases Survey Report.

CERANAE VS. APIS

In a widely cited paper by Martín-Hernández (2007), her arresting graph of nosema positive samples over time clearly shows a definite shift over the period from 1999 to 2005—there initially were only spikes in spring and fall (ostensibly from *apis*), transitioning to nearly 100% of samples being positive every month of the year (due to *ceranae*). Of note is that her data has an inherent bias, in that the samples were voluntarily sent to the lab by beekeepers for diagnosis of problems, suggesting that the data may reflect the change in nosema loads in sick hives. Also of note, is that despite this graph being widely cited, it is often misunderstood—it did not plot spore levels, but rather only the yes/no detection of nosema spores.

What the graph did strongly indicate was that *N. ceranae* rapidly and thoroughly invaded Spain over a period of only a few years! This initial finding has now been confirmed by Botías (2011). Likely, a similar phenomenon occurred in the U.S., since Chen (2008) found *N. ceranae* to already be widespread in archived U.S. bee samples dating back to 1995.

The general trend appears to be that *N. ceranae* now predominates in warmer countries, whereas *N. apis* is better adapted to colder areas. It has been often stated that *N. ceranae* has displaced *N. apis*, but more careful analysis suggests that that may not actually be the case!

When Dr. Robb Cramer asked me in 2007 to send him infected bees so that he could culture pure *N. ceranae*, he found that the samples often contained some *N. apis* as a "contaminant." In Dr. Diana Cox-Foster's (2007) analysis of CCD colonies, they also found both species of nosema. Later studies by Bourgeois (2010) and Runckel (2011) of commercial operations in the U.S. also found *N. apis*, but in far fewer hives than its cousin, only in spring and/or fall, and notably, at much lower spore levels than *N. ceranae.*

The differences between the detectability of the two nosema species (*N. apis* typically produces much lower spore counts and is generally only seen in spring and fall) may lead "to an increased chance of detecting *N. ceranae* over *N. apis*, which could have biased the impression that *N. apis* has been displaced" (Higes 2010).

So, has *ceranae* actually displaced *apis*, or have we merely been overlooking its cousin? In order to answer that question, Dr. Raquel Martín-Hernández (2011) carefully analyzed over 2000 bee samples from all across Spain. She found *ceranae* and *apis* coexisting throughout country, with *ceranae* clearly predominant (in roughly 40% of hives), *apis* hanging in there (in up to 15%), and occasional mixed infections (below 7%). She also found that infection by *ceranae* was favored in hotter areas of the country, whereas *apis* succeeded better where winters are colder.

I'm seeing similar indications from other countries (e.g., Gisder 2010), which are appearing to confirm that *apis* is the more cold-adapted species. As far as seasonality, Martín-Hernández found *apis* only in the spring and fall, whereas *ceranae* could be found all year, and notably, once *ceranae* infects a colony, it almost always persists (detectable with PCR, even if not obvious via spore counts).

Practical note: these studies indicate that *N. ceranae* remains present as an infection in a colony throughout the year, even if it is not detectable by microscopy. But we don't know whether these inapparent infections affect colony health.

I found one last study to be of special interest: Dr. Judy Chen (2009) looked at nosema invasion from the other direction—in a turn of the tables, *N. apis* appears to have been introduced from the Western honey bee (*Apis mellifera*) into the Eastern honey bee (*Apis cerana*) in Asia, and is now an emergent parasite in that species, which had historically been infected only by *N. ceranae*! She analyzed bee samples from China, Taiwan, and Japan. Her findings:

"*N. apis* was detected in 31% of examined bees and *N. ceranae* was detected in 71% of examined bees and that the copy number of *N. ceranae* was 100-fold higher than that of *N. apis* in co-infected bees, showing that *N. ceranae* is the more abundant of two *Nosema* species in the Eastern honey bees."

This study suggests that *N. apis* can not only hold its own against *N. ceranae*, but can actually invade into *ceranae's* turf! Interestingly, in the Eastern honey bee, despite its long coevolution with *N. ceranae*, *ceranae* still produces higher spore counts than its invading cousin.

CO-INFECTION

This brings up the question of what happens when bees are infected simultaneously by both species of nosema? Dr. Zachary Huang (pers comm) found that in both cage trials and field observations that longevity was substantially shorter for co-infected bees as opposed to those infected by either species of nosema alone (unpublished data).

Note that in Cox-Foster's (2007) CCD study that they found "a trend for increased CCD risk in samples positive for *N. apis*" (100% of CCD colonies tested positive for *ceranae* and 90% for *apis*, but remember that *apis* is easy to miss when samples consist of house bees). As Jim Fischer noted in a post to Bee-L, "What was striking was that every hive showing CCD symptoms tested positive for BOTH *Nosema apis* and *Nosema ceranae*, and this correlation was better than the correlation between CCD and IAPV that was the focus of the paper."

These findings leave me very curious about the impact of co-infection by two nosema species upon colony health!

SEASONALITY

Spore counts of *N. ceranae* generally reach a peak in May, then drop spontaneously during summer, and may spike sporadically in fall and winter. But there is more to the picture than this. Dr. Ingemar Fries (2010), who has studied nosema for decades, explains thusly:

"The typical pattern for *N. apis* infections in temperate climates is low prevalence or hardly detectable levels during the summer with a small peak in the fall. During the winter there is a slight increased prevalence with a large peak in the spring before the winter bees are replaced by young bees… The pattern is similar both in the southern and northern hemisphere… Unfortunately, very few data exist for *N. apis* on the seasonal prevalence from tropical or subtropical conditions. The only published year

round sampling under conditions where bees could fly all year round, revealed detectable levels of *N. apis* with no seasonal pattern of prevalence."

Along that line, Dr. Denis Anderson in Australia (pers comm) tells me that, "there are also many unseasonal occurrences of *N. apis* -- I get many samples sent in in the mid summer here that are loaded with N. apis." This could well be happening in the U.S., where, as far as I can tell, there have been few studies on *N. apis* in warmer areas, other than the fact that it was commonly found in package bees produced in the southern states.

Practical application: we need to learn more about the prevalence and seasonality of *N. apis* in the warmer parts of our country!

I've now seen data and presentations on *N. ceranae* seasonal prevalence from researchers from all over the world. Since a picture is worth a thousand words, I've summarized them in a crude graph below (Fig. 2).

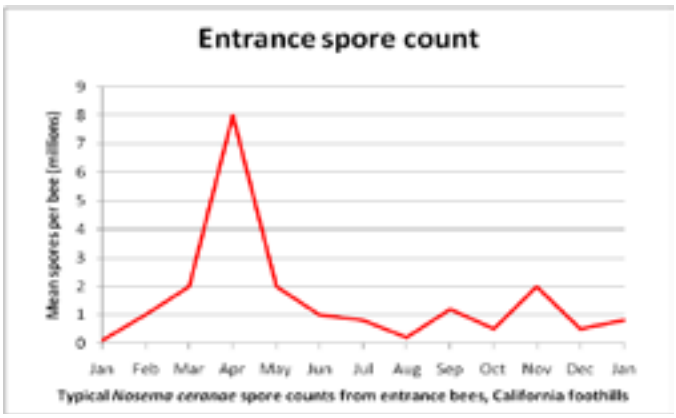

Figure 2. A generic graph of typical *N. ceranae* spore counts over the course of the year in my operation. **Important note:** Counts of house bees would follow the same trend, but at much lower levels. The late-season spikes are often sporadic flare ups that spontaneously "go away."

Practical application: It is not unusual to see high nosema spore counts in April and May. Counts will typically drop in summer whether you treat or not. I'll cover treatments in a subsequent article.

But new technology is showing something surprising about nosema sampling—that spore counts do not necessarily reflect degree of actual nosema infection (Meana 2010)! Look at the following graph (Fig. 3), from a recent nationwide study of pathogens in U.S. bees—instead of measuring spore counts, the blue bars indicate the percentage of colonies infected by *N. ceranae* as determined by DNA analysis (PCR).

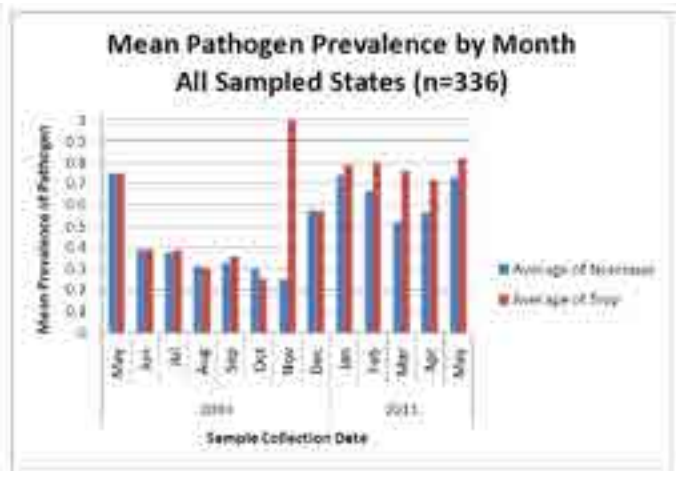

Figure 3. The blue bars indicate the percentage prevalence of *N. ceranae* in sampled colonies (e.g., 0.7 = present in 70% of hives). Note that even though spore counts suggest that *N. ceranae* disappears for much of the year (previous graph), a substantial proportion of colonies actually remain infected to some degree by the parasite. Also note how closely the coinfection with another intestinal parasite (the presumably opportunistic trypanosomes) tracks nosema infection. No one is sure whether there is a causal relationship, or whether the simple explanation is that both parasites flourish in stressed bees. Graph from Rennich, K, et al (2011) 2010-2011 National Honey Bee Pests and Diseases Survey Report.

As opposed to the above graph, Runckel (2011) also measured the amount of nosema DNA in samples, which presumably correlates with the intensity of the infection. They found high levels of *N. ceranae* transcripts in midsummer, at a time when spore counts are generally quite low (Fig. 5)! Their data indicated that *N. apis* was only present in spring and fall (which does correspond to spore counts). Go figure!

So what's up with high levels of *N. ceranae* DNA transcripts without correspondingly high spore counts? No one to my knowledge has answered that important question. What we do know is that *N. ceranae* can exist in the vegetative stage for a while before it produces spores (Martín-Hernández 2009). But we're not clear on to what extent *N. ceranae* produces "autoinfective spores," as opposed to the "environmental" spores that are discharged into the gut contents (Cali 1999), and whether such autoinfective spores show up under microscopy. What is clear, however, is that *N. ceranae* appears to be able to reproduce within a bee without producing spores that are observable by microscopy.

Practical note: although *N. ceranae* spore counts may disappear in summer, DNA analysis indicates that the bees may still be infected. This is something of a mystery, as the bee population turns over rapidly during the summer, suggesting that *N. ceranae* is somehow infecting new bees without spores being evident!

So the next question is, is an infection by *N. ceranae* more pathogenic than one by *N. apis*? Although some initial cage trials indicated extreme virulence for the new nosema, trials in which bees were allowed to feed upon natural pollen generally found that both species affect bee longevity about the same (Forsgren 2010, Porrini 2011, Huang pers comm) despite the fact that spore levels get much higher with *N. ceranae.*

Take home: We clearly still have lots to learn about *N. ceranae*! It does not appear to cause rapid death of well-fed bees. The inapparent summer infections are puzzling.

So what's the cause of the seasonality of nosema spore counts? With *N. apis* it is presumed to be due to the requisites of transmission via dysentery by infected bees in the hive during the winter and colony nutritional stress, and limited by its sensitivity to high temperature. Martín-Hernández (2009, 2010) demonstrated that N. apis can only grow in a narrow range of temperature (about 33°C). N. ceranae, on the other hand, grows readily over a range from 25°C to 37°C. However, N. ceranae spores are surprisingly susceptible to chilling (Fries 2010), which may limit their infectivity at lower temperatures.

Studies from a number of countries coinfected with both of the nosema cousins suggest that *N. apis* will continue to be the historical problem during winter and spring, with typical fall and spring spikes, whereas *ceranae* will be more prevalent in warmer climes, present throughout much of the year, spiking in late spring (perhaps tracking pollen flows), and then again sporadically in fall through winter.

Take home: if *Nosema apis* was a problem in your area prior to the invasion of *N. ceranae*, it may still contribute to colony health issues during the fall and spring!

SAMPLE INTERPRETATION

It would sure be easier if there were a simple sampling protocol that everyone could follow, and if there were clear treatment (or worry) thresholds based upon nosema spore counts, as there are for varroa (Fig. 4), but alas, I'm sorry to say that there aren't.

Figure 4. Average varroa infestation rates from 2700 colonies in 13 states (many of which received mite treatments). Sampling for varroa infestation level is relatively straightforward and simple to interpret. Typical treatment thresholds are below 5 mites per 100 bees. Graph from Rennich, K, et al (2011) 2010-2011 National Honey Bee Pests and Diseases Survey Report.

Unlike sampling for varroa, which are easily seen with the naked eye, sampling for nosema requires either a microscope or laboratory apparatus that can perform PCR. However, a number of researchers (Meana 2010, Bourgeouis 2010, Traver 2010) have demonstrated that spore counts alone do not give an accurate picture of the actual degree of infection. Unfortunately, as far as assessment methods available to Joe Beekeeper, spore counts will have to suffice as a surrogate measure of the actual degree of infection (Fig 5).

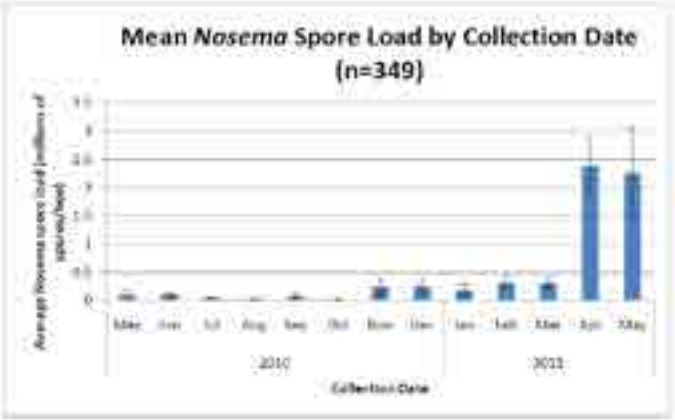

Figure 5. Average nosema spore counts from the same 2700 hives. Note the typical huge spike in spore counts (predominantly from *N. ceranae*) in spring, and then again lesser spikes in fall and winter.

Important note: these spore counts were from samples of bees from brood frames—counts from entrance bees would likely be several times higher (compare to Figure 2). Graph from Rennich, K, et al (2011) 2010-2011 National Honey Bee Pests and Diseases Survey Report.

That said, let's return to sampling for a bit. If you want to find spores, then sample older bees, such as foragers at the entrance (Meana 2010)—spore counts will typically be about 10 times higher in older bees, since it takes a while for the infection to build up in a bee (Smart 2011). He found that in infected colonies with a background spore count of 0.5-1M in bees from under the inner cover, almost no bees younger than 12 days old contained spores (at least detectable by microscopy).

This is not at all surprising, since El-Shemy (1989) found the same to be true for *N. apis*—spore counts were an order of magnitude higher in bees from the entrance. Indeed, he suggested that it was best to sample exiting bees at the entrance, since returning bees have likely defecated. The magnitude of the spore counts from an infected colony generally increases in samples (in order from lowest to highest), of bees from the broodnest, outer areas of the cluster, entrance bees, exiting foragers, returning foragers.

Both El-Shemy and Higes (2008) found that the best indicator of degree of infection was to squash bees from an entrance sample one at a time in order to determine the percentage of bees infected. My own sampling of sick colonies supports this recommendation. But in reality, few of us have time to squash dozens of bees one at a time for each sample—so I won't even suggest that you go there!

The next best method may be to do a spore count for a pooled sample of 50 bees from the entrance (but don't forget that even one or two highly-infected bees can greatly skew the count). In practice, however, it is often danged difficult and time consuming to collect 50 entrance bees, even if you use a special vacuum (Oliver 2008b), especially in cool weather or from sick colonies with few foragers.

For this reason, many researchers simply take standardized samples of bees from under the cover, or from an outside comb. There is support for this, as Gajda (2009) found that although spore counts were much higher in entrance bees, the relative proportion of infected bees was similar in samples taken from an outside comb.

Practical application: If you want to find out whether *N. ceranae* is present to any significant extent in your operation, sample bees from the entrance. If you want to know if the infection is serious, sample house bees from under the cover.

If you are curious as to whether you have gotten old or young bees in your sample, here is an easy general observation that I've made: since only nurse bees normally eat pollen, they are the only ones that will have it in their guts (duh). But my point is, that this is really easy to use that pollen as an indicator of bee age if you use the ziplock bag method for processing samples

(see my previous article, and Fig. 6).

Figure 6. How to tell if your sample contains young or old bees.

(Left photo) when you crush samples of nurse bees in a ziplock bag, and then mush them in water, the fluid will typically turn opaque yellow (since the guts of nurse bees are full of pollen).

(Right photo) on the other hand, the fluid from the guts of entrance bees will typically be a tan/gray color (since foragers and guards don't eat pollen).

WHAT IF YOU'RE DEALING WITH *N. APIS*?

Oh, that it were only so simple as dealing with only one nosema, but the previously cited studies suggest that many of us actually may still have *N. apis* popping up in fall and early spring. To make things even harder, spore counts of *N. apis*, on a per bee, or per pooled sample basis, are generally only a fraction (about $1/10^{th}$, as best I can tell from previous studies) of what we see with *N. ceranae.* But it also appears that an infection by *N. apis* at that low level can be as serious as an infection by *N. ceranae* at a much higher spore count!

Important note: Martín-Hernández (2011) easily found *N. ceranae* in samples of either foragers or house bees, whereas she only found *N. apis* in foragers and drones. So if *N. apis* is your concern, then you should take entrance samples! *N. apis* infection may be serious at a much lower spore level!

SEASONALITY

The other consideration is that you must put any spore count into the context of time of year, the climate that your bees are in, the nutritional status of the colonies, and especially the load of other pathogens.

I will discuss these points in the next article.

In cold climates, nosema management may have other considerations. Hedtke (2011) performed a detailed 6-year study of 220 hives in Germany, and (surprisingly) found that "No statistical relation between *N. ceranae* detection in autumn and the following spring could be demonstrated, meaning that colonies found to be infected in autumn did not necessarily still carry a detectable infection in spring, and colonies which developed a detectable infection over winter had not been detectably infected in autumn." So much for careful sampling!

RECOMMENDATIONS

Heck, I'd be crazy to stick my neck out and give any recommendations! So let's look at what sort of nosema levels are involved in crashing colonies. The CCD colonies analyzed by Cox-Foster (2007) had mean spore counts ***in the range of tens to hundreds of millions from broodnest samples!*** Is it really any surprise that those colonies collapsed? The house bees in Higes' (2008) winter-collapsing colonies hit 20M before they went down (field bees hit 50M), but those that collapsed in summer only hit 3M.

But note that in the U.S. survey graph above, that 2M was the *average spore count across the U.S.* in April and May of this year, yet I'm not hearing of massive colony collapses, despite very poor conditions in many states.

In my own California foothill operation (we get snow during the winter, and move to almonds in February), it is not unusual to see entrance spore counts in May in the millions or tens of millions, but they generally drop during summer, provided that colonies are not stressed by other factors. Entrance counts during summer and fall are typically in the zero to 5M range (25 spores per field of view if you follow the protocol in my previous article—I'll call these FOV counts (Oliver 2008c)). I have not looked at near as many samples of house bees, but counts are generally zero to a fraction of a million, even in colonies running at 10M at the entrance.

I am by no means suggesting that you follow my lead, but I simply no longer worry about high spore counts in spring, as they generally spontaneously drop later in the season, and I haven't experienced winter losses associated with *N. ceranae* (unless I've intentionally inoculated the hives with viruses). However, I do keep my mite levels down, and feed pollen supplement to maintain good nutrition if necessary. *And* I monitor nosema levels throughout the year so that I don't get blindsided!
I've never treated for nosema (except in experiments), yet have not experienced colony collapses since 2006. But I'm not saying that you have no reason for concern—I will be writing about a trial in which I did compare survival of treated vs. untreated colonies that had virus issues, and fumagillin appeared to help.

I'd be concerned if counts for house bees got above 5 per FOV at any time, although I know several large commercial beekeepers who routinely ignore such counts with no dire consequences so far. I just checked a number of samples of house bees today (late October), and they ran from zero to 2 spores per FOV, despite there often being counts of 100-200 per FOV of entrance samples this spring.

In some operations where N. ceranae apparently got out of hand, treatment and comb sterilization seemed to help. However, in other operations with sky-high spore counts in spring, lack of treatment did not result in any noticeable problems. Due to these huge discrepancies, it is confoundingly difficult to come up with recommendations. However, the more beekeepers who start tracking spore counts, the more we will learn about appropriate treatment decisions.

If you are in an area with a long, cold winter which keeps the bees confined, you may be dealing with *Nosema apis*, for which the economic threshold of 1M (5 per FOV) for house bees has been well established.

Practical application: since spore counts for *N. apis* generally only reach levels about 1/10th of those for *N. ceranae*, you'd be wise to ask your local university determine which nosema species you're dealing with, since it follows that the economic threshold for treatment for *N. apis* may be far less than that for *N. ceranae.*

I will continue this review of *N. ceranae* in the next issue, including treatments, and its relationship to colony mortality and honey production.

ACKNOWLEDGEMENTS

Thanks to you, my readers! It just occurred to me that I've recently passed the 5 year mark in writing for ABJ, and it's been one wild ride! If I had any idea what I was getting into, I would probably have chickened out. But your feedback and appreciation keep me going—my motivation is simply the gratification that I get from sharing what I've learned with other beekeepers. Your donations also allow me to perform the sort of quick and dirty research necessary to answer burning questions.

I am constantly on the learning curve, and greatly appreciate hearing information that is relevant to better bee management—feel free to contact me (no beginners questions please) randy@randyoliver.com.

As always, Peter Loring Borst has helped me greatly with research. I thank Dr. Mariano Higes for his patience in discussing his research. Dr. Steve Pernal and Ingemar Fries have been gracious with their time. I also thank all the other nosema researchers who have patiently answered my questions.

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These articles were originally published in the American Bee Journal. All of Randy's bee articles may be found at: www.Scientificbeekeeping.com. If you find these articles of use. Randy appreciates donations to fund his efforts.

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Excerpts from AHBIC News
February & March 2013

IMPORT FIGURES

Eddy Planken has kindly furnished the following import and export figures:

AUSTRALIAN IMPORTS AND EXPORTS ANALYSIS

Period	Combined Imports Tonnes	Combined Exports Tonnes		Packed Exports Tonnes	Bulk Exports Tonnes	Packed Exports Tonnes	Packed Exports %	Bulk Exports Tonnes	Bulk Exports %
Mar-13			Mar-13						
Dec-12	652	1,065	Dec-12	576	489				
Sep-12	1113	1,036	Sep-12	626	410				
Jun-12	1049	1,157	Jun-12	609	548				
Total	2,814	3,258				1,811	56%	1,447	44%
Mar-12	975	1,305	Mar-12	544	761				
Dec-11	782	1,501	Dec-11	543	957				
Sep-11	831	961	Sep-11	422	539				
Jun-11	658	1,104	Jun-11	529	575				
Total	3,246	4,871				2,038	42%	2,832	58%

CONGRATULATIONS LEILANI

Congratulations to Leilani Leyland on being announced runner up in the 2013 Western Australian RIRDC Rural Women's Award ceremony. The announcement was made last week.

If she had won the award, there was a $10,000 prize which Leilani had intended to put towards the Honey Week celebrations in Western Australia later this year. Leilani said that it was "fantastic" that she had received the runner up award.

The publicity created by her being a finalist is good for the beekeeping industry in the west. An example of this publicity was the interview on the Western Australian Country Hour which was made a feature on the ABC Rural's national page.

You can read part of or listen to the full interview at http://www.abc.net.au/rural/content/2013/s3689358.htm Leilani makes some very valid points about pollination and also the age old problem of declining resources.

Leilani's success should encourage other women in the beekeeping industry to enter the award next year. Entering can only raise the profile of our industry. Details can be found at http://www.rirdc.gov.au/rural-women's-award.

BEE LOSSES

In recent times we have had bush fires and floods in different parts of Australia.

From reports I have received and read, there have not been any significant losses in Victoria. South Australia, whilst suffering from the dry weather, did not seem to have any losses. New South Wales are reporting minimal losses but there has been a big loss of resources in the fires.

Tasmania had minimal losses from the fires there although some had to put in an effort to protect hives. At this stage, Western Australia seems to be enjoying reasonable conditions.

In Queensland, reports so far are that over 700 hives and nucs were lost in the floods. Many were inundation from back up water and the hive material has been recovered.

If you have ever had hives flooded, you will know that it is not a pleasant job cleaning the material. Not sure if this will be the final figure.

PARADICHLOROBENZENE - PDB

All beekeepers should note that the Extraneous Residue Level (ERL) for PDB will expire on 15 May, 2013. So this will only be in place for less than another two (2) months. This ERL was put in place to allow beekeepers who may have had problems to fix them. Any possible problems should have been fixed by now. It is your duty to keep our industry clean and green. ***March 2013*** 3

EXECUTIVE MEETING

The Executive meeting was held in Canberra on Wednesday 13 March, 2013. The proceeding day Chairman Lindsay Bourke and I met with Australian Pesticides and Veterinary Medicines Authority (APVA), Plant Health Australia (PHA) and Agrifood Skills Australia. See below one of the outcomes from the meeting with Agrifood Skills Australia. At PHA the categorisation process was discussed. This is under review but can be activated if an incursion happens. At APVMA we had discussions on moving on with the minor registration of chemicals that will be needed if varroa gets here. We also discussed the change to the AHBIC registration of permethrin to allow for different strength formulations to be able to be used for ground treatment against small hive beetle. The product currently registered will no longer be made so different strength formulations needed to be registered. We were also given an update on the pollinator safety review that is currently underway.

BEE INDUSTRY- FUNDING AVAILABLE FOR TRAINING THROUGH NWDF

The National Workforce Development Fund (NWDF) is an Australian Government initiative that helps businesses identify and address their workforce development needs. It operates on a co-funding arrangement where new and current workers can receive government funding of **up to 67%** of the cost of undertaking approved courses. These courses include the Certificate III in Beekeeping. Higher level vocational courses in a variety of fields including leadership and business management are also available. Those seeking to enter the industry could be eligible for a Certificate II level qualification with a focus on beekeeping. The NWDF is administered by AgriFood Skills Australia on behalf of the government. Your Honey Bee Industry Council is available to work on your behalf with AgriFood to access training funds under the NWDF. AgriFood has confirmed there remains funding available to support training of Bee Industry workers. The training can be undertaken over a short duration or over several years.

Interested? Want more information? Let Trevor Weatherhead know if you are interested. See the website http://www.agrifoodskills.net.au/?page=NWDFFunding

Thanks to Rosie Stern, the Chair of the AHBIC Education Committee, for putting us in contact with the right people and doing the initial ground work.

LIVE BEE EXPORTS

I met recently with the Queensland Minister for Agriculture, Fisheries and Forestry re what we can do after the Transition to Management Plan for the Asian bee finishes on 30 June, 2013. I impressed on him that any decision will have ramifications for all exporters of live bees from Australia and not just Queensland.

Our exports to Canada are at risk and any chance of having the US market re-opened will not be realised if something is not done. I had a good hearing from the Minister and I am hopeful that something can be done to ensure we keep those markets open.

POST ENTRY QUARANTINE FACILITIES

I attended a meeting in Brisbane put on by the Federal Department of Agriculture, Fisheries and Forestry where we were given a briefing on where the proposed facility in Victoria is at. Planning is well underway and the plans are to go to the Public Works Committee of the Federal Parliament for final approval. From the information given, it seems that the importation of queen bees will be well catered for, albeit that it will be a reasonable distance to travel for some who will import.

Speaking with a couple of potential importers who attended the Sydney meeting, they went away reasonably satisfied. The meetings reported that the importing beekeeper will be able to bring their own bee hives to the quarantine station to firstly provide the bees for the nucs in the quarantine station and also have hives outside which can be used to top up the nucs and also be able to raise queen cells for sending back to their operational headquarters. The nucs in the quarantine station are never released to the outside once they are inside. They are destroyed upon completion of the import process.

THANKS EDDY

As a result of the sale of Wescobee to Capilano on Friday 22 March, 2013, Eddy Planken has advised AHBIC of his resignation, to take effect immediately, from the AHBIC Executive and the Food Safety and Prevention of Residues Committee.

On behalf of all beekeepers, Australia wide, I would like to thank Eddy for his contribution to our industry. Eddy has been on the AHBIC Executive as a member and Deputy Chairman and also a member of the Food Safety and Prevention of Residues Committee for many years now.

I would like to put on record my thanks to Eddy for helping me with putting in place the changes to the AHBIC Constitution. This was not an easy job.

Eddy was also President of the International Honey Exporters Organisation (IHEO) for many years and kept that organisation together.

On 26 January 2011 Eddy was awarded the Medal of the Order of Australia (OAM).

We will miss that infectious laugh at our meetings and I would like to thank him for all the wise counsel he has given AHBIC over the years. As our AGM is in Perth this year, hopefully we will have a chance to catch up with you there. From all the beekeepers Australia wide, thank you Eddy.

Lindsay Bourke
AHBIC Chairman

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Pre-Tour in Russia
8 Day Escorted Tour departing 22 September

Highlights: Tour the sites of St Petersburg and Moscow; visit the impressive Hermitage; journey aboard the Sapsan high-speed train; meet with Russian National Union of Beekeepers; attend Moscow Circus; visit Red Square and the Kremlin; attend the Russian National Dance Show "Kostoma"; visit local beekeepers and apiaries.

Apimondia Congress Package, Ukraine
9 Day package departing 28 September including 5 day Congress in Kyiv

Post-Tour in Crimea, Ukraine
7 Day Escorted Tour departing 5th October

Highlights: Visit a honey packing enterprise and apiaries including one of the largest in Crimea; city tours of Simferopol, capital of Crimea, and Yalta; journey around ancient Genoa Fortress; tour of Livadia Palace and the oldest winery in Crimea including wine tasting; boat trip along the coast of Crimea peninsula; visit Bakhchisaray Khan's Palace.

TOUR LEADER:
Bruce White

Bruce has worked in the bee industry for over 40 years in Australia with extensive international experience including involvement in many Apimondia conferences.

Contact us to receive more information on these exciting and educational tour packages

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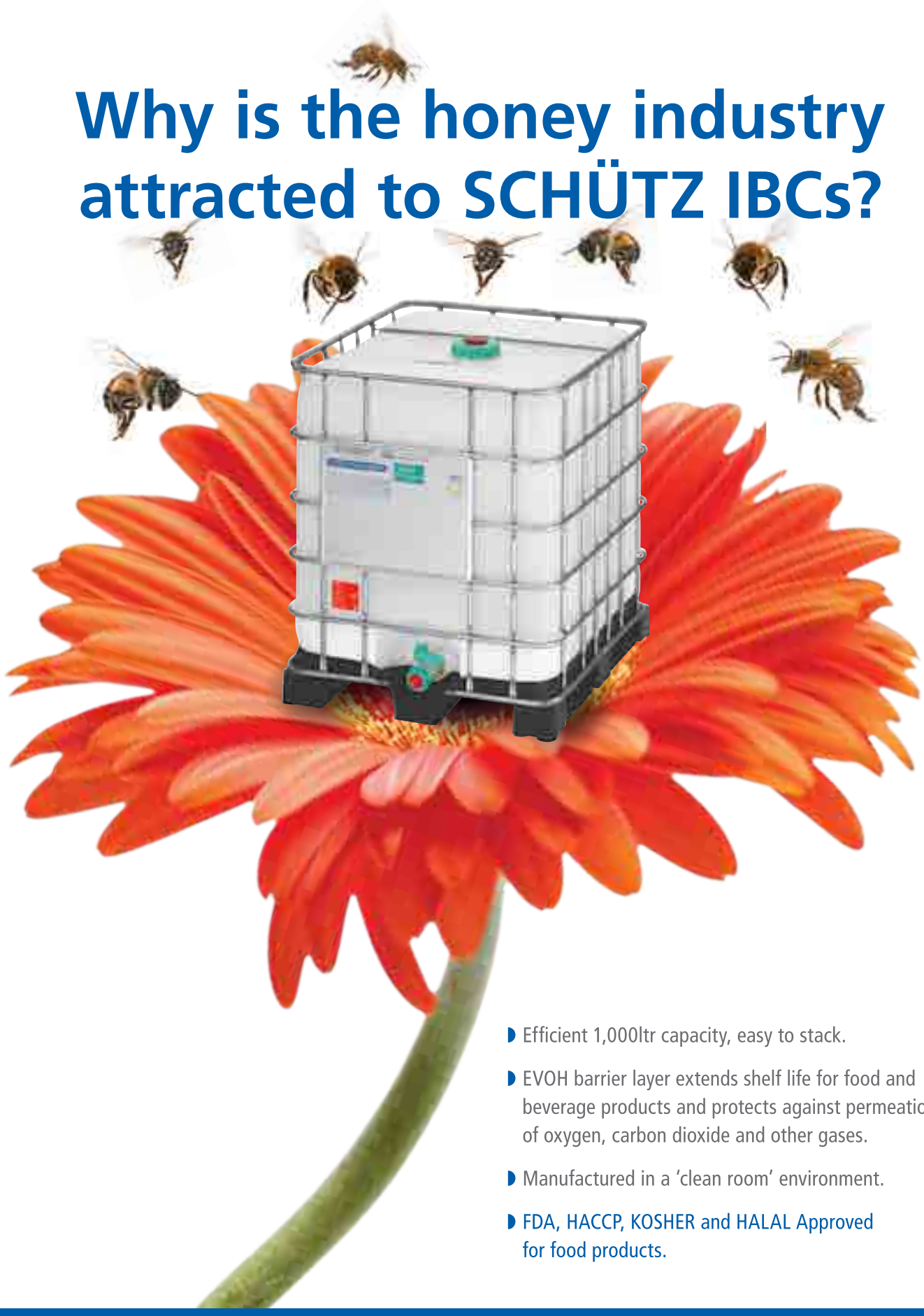

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