Leiston Beekeepers' Newsletter

Issue 2 - 2014 Editor - Laurie Wiseman

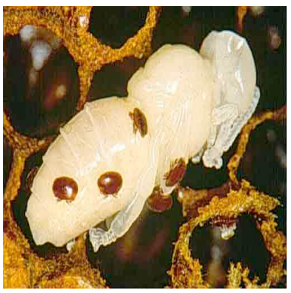
Monsanto is developing new biotechnology to kill the Varroa Mite.

(News from the New York Times International Weekly on Sunday 23rd March 2014 and the University of Aberdeen 22nd December 2010)
http://www.abdn.ac.uk/news/3912/

"Monsanto, the American biotechnology company, is developing what could become the next powerful weapon in the war against the varroa mite - one that harnesses a Nobel Prize winning discovery to kill insects and pathogens by disabling their genes. It was announced by DEFRA on 22nd December 2010 that researchers from the University of Aberdeen had worked out how to 'silence' natural functions in the mites' genes to make them self destruct**"**.

Dr. Alan Bowman from the University of Aberdeen said at the time: "Introducing harmless genetic material encourages the mites' own immune response to prevent their genes from expressing natural functions. This could make them self-destruct. "The beauty of this approach is that it is really specific and targets the mites without harming the bees or, indeed, any other animal." Dr Giles Budge from National Bee Unit, part of the Food and Environment Research Agency (FERA), said: "This cutting edge treatment is environmentally-friendly and poses no threat to the bees. With appropriate support from industry and a rigorous approval process, chemical-free medicines could be available in five to ten years." The then Environment Minister Lord Henley said "This excellent work by UK scientists will keep our hives healthy and bees buzzing."

The process uses the Nobel Prize-winning theory 'RNA interference', which controls the flow of genetic information. So far the 'silencing' has worked with a neutral varroa gene, which has no significant effect on the mite. Scientists now need to target a gene with the specific characteristics that are perfect to force the Varroa to self-destruct. Tests by other scientists have shown the treatment can be added to hives in bee feed. The bees then produce royal jelly containing the treatment for food for their young, where the varroa hides. The treatment has then found its target; the mite eats the royal jelly then thinks it is ill and kills itself.



Click on this link to hear Dr Alan Bowman and Dr Giles Budge explain this new work and possible treatment:
http://news.bbc.co.uk/earth/hi/earth_news/newsid_9306000/9306572.stm

Why not take the Basic Assessment?

Several L&DBKA members have recently taken the BBKA Basic assessment and passed with flying colours. Any member who has been keeping bees for a couple of seasons should consider taking this assessment. Contact the Secretary on pjr@pennyrobertson.plus.com and find out more about what's involved. The County Association is aiming at winning the BBKA's Surrey Shield at the 2015 ADM and is encouraging branches to support this aim. The shield is presented to the Association with the highest number of Basic Assessment passes. **Let's go for it!!**

A successful day at the School Farm Fair

Suffolk beekeepers attended the School Farm Fair put on by the Suffolk Agricultural Association on 24th April. Leiston organised the stall and members from across Suffolk helped out. This event shows the 4500 attending school children where their food comes from. It was a great day and we all lost our voices from all the talking!

We have another East Anglian Research Student

Following the success of our first student, Ricarda Kather, in discovering how Varroa manages to camouflage itself chemically and so escape the bees' attentions, Dr Alan Bowman has just informed us (writes our coordinator, Wally Thrale of the Beds BKA) that Aberdeen University has been successful with their bid for further funding. The EARS group has again offered financial help. Alan asked me to pass on his gratitude for the support given by the Eastern Associations. The research is again Varroa-related and will look at Deformed Wing Virus (DWV). I am sure that we all agree that this work is of vital importance. The findings may help us in the battle against Varroa and help to reduce its impact.

EARS 2 - an overview

The project will try to identify how Varroa alters DWV to make it more virulent when Varroa is the transmission agent. Before Varroa reached Europe and the UK, the virus existed in colonies without overly impacting on its wellbeing. In the presence of Varroa, however, the virus is somehow changed and then often greatly impacts the health of the colony. ***The project's hypothesis is that the virus becomes pathogenic when it moves from the bee environment (the 'natural' host) into the Varroa environment (the 'unnatural' host).*** Using an artificial feeding system developed in Aberdeen, the changes in DWV will be investigated as the Varroa first imbibes the virus and then transmits it. DWV transmission from Varroa mother to offspring via the eggs and sexual transmission will also be investigated. Studies into growth of DWV in cultured cells of a Varroa-like organism will be performed to assess if similar changes occur in that environment.

Watch out for Asian Hornets!

Vespa Velutina
Asian Hornet

Vespa Crabro
Native Hornet

If you see an Asian Hornet & can, take a picture; send it to: alertnonnative@ceh.ac.uk.

Did you know?

That bees have five eyes…. Three ocelli, eyes on top of the bee's head, and two compound eyes. The compound eyes are only capable of registering an image when 'switched on' by the ocelli when they sense light intensity. The compound eyes not only provide an image, albeit a poor one by human standards, but also detect polarized light and ultra violet light both essential for determining direction in order to communicate the source of forage by dancing. The compound eye is constructed from many hexagonal facets with the queen having 4000, the worker 5000 and the drone 8000. These many lenses produce a pixilated image whereas the ocellus has one lens and does not produce an image

Is the Honey Bee 'native' to Britain? - Natural England says NO!

Dr. David Ashton of the BBKA's Technical and Environmental Committee reported to the 2014 BBKA Annual Delegate Meeting in Leamington Spa on 11th January 2014 that...." *The government has announced its intention to develop a 'national pollinator plan' and we are seeking that the interests of honey bees and beekeepers are taken into account. We are somewhat concerned about the apparent anti-honey bee stance of a number of key people who will influence the course and direction of a national pollinator plan"....* When asked by a delegate who these people were David Ashton replied it was those who represent 'Natural England'.

An article by Natural England invertebrate specialists in Conservation Land Management, Vol 5 No 2 (Summer 2007) had alerted the Lincolnshire Wildlife Trust to potential and hitherto unthought-of of conflicts of introduced higher numbers of pollinators on sensitive sites competing with 'the locals'. A cautionary approach was advised. Coupled with the visitor issue *(health and safety issues - editor)* the Trust has therefore decided to not continue with the placement of hives on reserves. However there is a 'wild' colony of honey bees living in the roof of the Trust headquarters!

The history of the European Honey Bee

(The article below by Roger Patterson – BBKA Executive member – is based on a lecture given by Philip Denwood to the SICAMM Conference in Landquart, Switzerland, on 1st September 2012)

"Articles by Dr. Dorian Pritchard, and by Norman Carreck of the Laboratory of Social Insects at Sussex, have presented the evidence, convincing in my opinion, for the immigration of the honey bee into mainland Britain across the land bridge from Europe at least 9000 years ago, and its continued existence here ever since. This bee would have been the ancestor of the Apis mellifera mellifera (A.m.m) or Dark European subspecies and geographical race, as would any later imports from neighbouring parts of the continent by man. Subsequent natural selection down to the mid 19th century produced a variety of local strains of this bee adapted to the various environments of the country.

The period from 1859 to the present day has seen the importation of bees of both A.m.m and other subspecies from many parts of Europe, including the Netherlands, France, Italy, the Balkans and Cyprus. It has also seen the creation and importation of a number of hybrid-based bee types collectively known as Buckfast, under the initial inspiration of Brother Adam.

The above views, at least as they concern early history, are at odds with those published by others and adopted by the official body promoting nature conservation, Natural England, whose staff maintain that the honey bee was introduced by man some 1500 years ago, is therefore not 'native' to Britain, and should therefore be excluded from nature reserves.

Another and more serious case of flying in the face of the evidence is that of the 'Isle of Wight Disease', an event which is commonly alleged a) to have caused the heavy losses of bee colonies which occurred between 1906 and 1918; b) to have been caused by the Acarine or tracheal mite; and c) to have exterminated the native British honey bee during that time, prompting the importation under the government's restocking scheme of large numbers of bee colonies, mainly from the Netherlands and France.

Many experienced beekeepers in the 1920s and later, for example in the pages of the British Bee Journal, challenged the views that IOW disease was caused by Acarine and that it caused extinction of any race of bees. L.E. Snelgrove commented in 1946, "…. many writers have expressed the view that bees of pure British origin cannot now be found. The writer does not hold this view. Apart from the fact that he has continuously found British bees in certain country districts showing no sign of crossing with foreign races, the laws of heredity conflict with the supposition that a pure race can be eliminated by crossing alone. In 1936 sanctions were imposed on Italy by the British Government and the importation of queens from that country diminished from that time and ceased during the war. For some years, too, the importation of other races, Carniolans, Caucasians, etc., has been discontinued. The Italian element, as shown by colouring, is steadily disappearing and many of our bees are becoming dark and indistinguishable from the old British bees."

The Isle of Wight phenomenon was thoroughly debunked on a scientific basis by Dr. Leslie Bailey of Rothamsted in 1981[3]. According to Beowulf Cooper, founder of BIBBA, "Some of those personally involved in the restocking campaign have admitted to me that there was in fact no shortage of surviving native bees."[4] And yet as Norman Carreck has recently written, "half a century after the explanation was found to be scientifically unsound, many beekeeping books and articles still perpetuate the myth that the IOW disease was caused by the tracheal mite Acarapis woodi "; a prominent example being H.R.C. Riches, President of the Central Association of Beekeepers and past President of the British Beekeepers Association in 1992. Even today similar claims are commonly made. However, in the last decade DNA studies by Pedersen and others in Denmark and elsewhere have conclusively shown that modern specimens of Dark Bees from the UK and Ireland fit into the genetic specification of Apis mellifera mellifera".

Roger Patterson - Executive member of BBKA