

Notes on Treatment Free Beekeeping - January 2018

We are starting our 10th season keeping bees without using any treatment for Varroa, and our bees are fine!

Evidence as to how bees and Varroa can coexist is accumulating rapidly.

Our background to this topic is summarised in our article, 'Varroa Has Lost its Sting', where we outline our experience of Treatment Free (TF) beekeeping, and the supporting evidence from our Winter Losses surveys that we completed for 5 years up to 2015. The surveys, which included data from members of BKAs, found that the majority of beekeepers were not treating for Varroa, and were experiencing lower winter losses than beekeepers that were treating. This article, with references, can be viewed on our website - <https://beemonitor.org> The site was set up to show real time temperatures in a beehive and now has over 7 years of this data, as well as a short video about our beekeeping and interest in tree colonies.

We wrote the above article over two years ago; time moves on, and much more information is now available to try and answer the question, 'How can honeybees coexist with Varroa - and thrive?'

Hygienic Behaviour – i.e. the removal of Varroa and Varroa damaged pupae from the hive – known about for a long time, studied by Prof Ratnieks at Sussex Uni, and observed by many of us.

Superinfection Exclusion – we are now entering the very complex world of virus biology, which is way beyond our pay grade! But, it could be good news. As we understand the research, it is showing that locally adapted and TF bees have high loads of Deformed Wing Virus (DWV) B variant, which is protecting the bees against the harmful effects of DWV A variant. To read background information on this exciting research view 'REVive /BDI Project': www.beediseasesinsurance.co.uk/research/revive. The Project is analysing treated and TF bee samples provided by 60 BKAs across the UK, and is headed by Prof Stephen Martin at Salford Uni.

We cannot refer to Hygienic Behaviour and Superinfection Exclusion without referring to Ron Hoskins. Ron has not treated his bees for over 20 years, has dedicated many of those years to the microscopic study of Hygienic Behaviour, and it was the virus analysis from Ron's bees that led to the theory of Superinfection Exclusion. Ron first learnt about beekeeping 75 years ago, and we congratulate him for his work. If you are interested in this topic visit his informative website: www.swindonhoneybeeconservation.org.uk

Evolution – it is now becoming clear that left to themselves (i.e. no chemical control of Varroa mites) locally adapted honeybees are evolving to cope with Varroa. Whether by Hygienic Behaviour, and/or Superinfection Exclusion, and/or other mechanisms, research is recognising that our bees can evolve by natural selection to coexist with Varroa. Science is gradually catching up with the bees!

There is an abundance of literature on TF beekeeping. Two really excellent accounts were published in the Autumn edition (issue 197) of the Welsh Beekeeper magazine: <http://www.wbka.com/welsh-beekeeper/magazine-back-issues/> The first is an article by Dr David Heaf on page 30, entitled, 'To treat or not to treat, that is the question'. David, a member of Lleyn & Eifionydd BKA, documents his own experience of TF beekeeping, and highlights "three [recent] papers by apiologists that show the sound scientific basis of the no-treatment approach". The second, on page 26, is a letter by two beekeeping brothers, Joe and Chris Ibbertson. They are two very enthusiastic beekeepers, who do their beekeeping in their own words, "in an area of Northamptonshire that is surrounded by treating beekeepers and arable land". **Both these detailed accounts document beekeeping TF and provide excellent and up to date references for an overview of this approach to beekeeping.**

Relevant videos: 'Varroa Destructor; A Different View' Paul Cleacer, Reigate BKA, TEDxDorking. October 2016. https://youtu.be/ArtA0873_PA

'Bees in the Wild', Parts 1 & 2. Roger Patterson & Tom Seeley at the National Honey Show 2017

Part 1: https://youtu.be/txGzuVJhJ_Y Part 2: <https://youtu.be/T7CB8E7jKBc>