

Natural Beekeeping

by DECLAN SHERRY

‘Disease will keep company with those subjected to it: that is a fixed law’

Mismanagement, exploitation and ignorance of the simple and unchanging laws of nature have exacerbated disease within honey bees. Interference by the methods of traditional beekeeping is a deliberate disorganization of every bee community. The worst crimes involve feeding bees an unnatural diet, manipulating the chosen queen of the hive and the ubiquitous treatment of disease.

Beekeeping should reflect a love of nature and every ecosystem within. The true beekeeper should have an open mind, be eager and ready to absorb new knowledge, new ideas and new ideals. A beekeeper should be a biologist, a carpenter, a horticulturist, botanist, herbalist and many more. Unfortunately, how many beekeepers are botanists or herbalists? Few if any. However, bees themselves are instinctively highly skilled botanists or herbalists and wonderful doctors in their own right. Leave the bees alone to manage their own kingdoms and healthy hives will thrive.

In clear headed truth, excess interference, feeding or the treatment of bees does not make sense in the long term. The heart, love and inspiration of a hive will die and the very shock generate sickness.

Local symptoms are an indication of disorder of the whole body, for when one part of the body indicates sickness then the entire organism is likewise sick. In the wild, sickness is generally only one of injury or wounding, however, disease will keep company with those subjected to it: that is a fixed law of nature. The only way to have a sustainable natural system of beekeeping is to stop treating. The treatment of Varroa is a death spiral that is now collapsing. The systematic use of substances used by beekeepers to treat disease disturbs the precarious system within the hive. A colony is a whole system in itself of beneficial and benign fungi, bacteria, yeasts, mites, insects and other flora and fauna that depend on the bees for their livelihood. In this non-mutual relationship, the parasite benefits at the expense of the host. However, the host can develop mechanisms to reduce the parasitic load. This creates an equilibrium, which is, in the end, a mutual benefit as a dead host is not in the interest of the parasite.

Host/parasite relations are very common in nature. In the case of Varroa and the bee, it is clear that provided with the opportunity bees can and will develop a natural varroa resistance response. Varroa resistant honey bees will keep the Varroa infestations on a low level, will be healthy showing no signs of viral or bacterial infections and ultimately will not have to be treated by the beekeeper.

This is achieved by is the removal of infected brood. Varroa Sensitive Hygiene (VSH) is a very efficient method developed in the wild by the Asian Honey Bee (*Apis cerana*). They developed resistance as natural selection without human interference empowered them to do so. *Apis cerana* is the natural host to the mite *Varroa jacobsoni* and the parasite *Nosema ceranae*, both serious pests of the Western honey bee. Having co-evolved with these parasites, *A. cerana* exhibits more careful grooming than *A. mellifera*. thus has an effective defence mechanism against Varroa that keeps the mite from devastating colonies. In bees which have inherited the Varroa Sensitive Hygiene trait, a female Varroa mite will still enter the cell and start the reproduction process. However, the worker bees can detect that a Varroa is in the closed cell and begin opening the cell of the undeveloped pupa. Once the cell is opened, other worker bees remove the pupa with the Varroa. The Varroa has not been able to reproduce. Some of these Varroa mites might try to enter a cell again, but have only a limited live-span [sic]. Other than defensive behaviours such as these, much of their behaviour end biology is very similar to that of *A. mellifera*. It has been shown that this VSH-trait developed by the Asian honey bee is very efficient. If infected brood from a non-VSH colony is given to a VSH-colony, most of the Varroa mites (>90%) are detected and removed. If the queen of a non-VSH colony with

relatively high mite numbers is replaced with a VSH queen, mite numbers start to go down once enough daughters of the new queen are present in the colony.

As long as we continue to treat we are not empowering our bees. Consequently, we get weaker bees who can only survive if we treat and stronger parasites who can only survive if they breed fast enough to keep up with our treatments. This is the opposite of what we want. As beekeepers we need to be propagating the bees that can survive instead of propagating the pests that are strong enough to survive our treatments. No stable relationship can develop until we stop treatment and develop a natural environment which will develop within the hive over time. Only then will you have bees who genetically can survive and parasites that are in tune with their host.

Besides non treatment, what can beekeepers do to have a natural sustainable beekeeping system?

Honey and real pollen are the proper food of bees. Sugar syrup has a much higher pH (6.0) than Honey (3.2 to 4.5) (Sugar is more alkaline). This affects the reproductive capability of virtually every brood disease in bees plus Nosema. The brood diseases all reproduce more at the pH of sugar (6.0) than at the pH of honey (~4.5). And this is not to mention that honey and real pollen are more nutritious than pollen substitute and sugar syrup.

Rather than using foundation made from recycled, contaminated wax, move to a foundation-less [sic] system which will provide clean natural comb. Foundation is designed to control the size of the cells the bees make. Since workers are from one size and drones from another and since beekeepers for more than a century have viewed drones as the enemy of production, beekeepers use foundation to control the size cells the bees make. At first this was based on natural sizes of cells, however, today we have a standard cell size of foundation that is 5.4mm. Natural cell size runs from about 4.4mm to 5.1mm with 4.9mm or smaller being the common size in the core of the brood nest. So what we have is unnaturally large cells making unnaturally large bees, ideal conditions for Varroa reproduction. With natural cell size the bees are provided with the natural opportunity of controlling, the Varroa population.

Every disease narrows the gene pool to only those that can survive that disease, and every pest narrows the pool to only those that can survive that pest. In any species that uses sexual reproduction, genetic diversity essential for the overall success and health of the species. Beekeepers keep limiting that pool even more by introducing queens from outside the hive and by buying queen from only a few breeders, something which never happens in nature. Commercial queen breeding is the ruination of modern beekeeping, the only thing that I and likewise minded beekeepers have noted as flourishing alongside queen breeding, is disease.

The more we narrow the gene pool, the less likely it is that the remaining genes will be sufficient to survive the next onslaught of diseases and pests.

Resistance like evolution will not develop overnight. As a beekeeper you must decide if you want to afford bees the opportunity to develop resistance naturally with possible colony losses, or continue the practice of retaining weak bees dependent on treatment. If you are not convinced and maintain treatment is a necessary part of beekeeping, then at least let the medium be honey, which in itself is a great all round healing substance.

The acknowledged father of medicine, Hippocrates, used hydromel, which is honey and water as a basic medicine for treatment of all the ills of mankind. It is said that when Hippocrates died, he who loved bees and exalted honey, was kept company in death by a swarm of wild bees that settled on his tomb and produced honey with which miraculous cures were achieved.