The complete idiot's guide to beekeeping **by Dean Stiglitz and Laurie Herboldsheimer**
Alpha/Penguin, 2010, ISBN 978-161564-011-9, US $14.99, UK £9.99

A review by David Heaf

The book is largely aimed at beginners and certainly covers the essentials such as buying kit, getting bees, hiving them and looking after them. However, experienced beeks interested in turning to 'treatment free' beekeeping, and willing to trawl through the essentially elementary material, will come upon the basic principles and methods needed for making the change.

The book has four parts which cover:

1) basic bee biology and getting equipment
2) getting bees; siting, populating and managing the hive
3) healthy approaches to small cell, treatment free management; disease and breeding
4) harvesting, bottling, rendering wax, making foundation, wintering colonies, preparing for next season, expanding the operation

I picked out what I thought were the key points of the method advocated by the authors. I list them here by putting the more 'bee-appropriate' points at the top of the list:

- put long term gains before short term profits (sustainability)
- allow an unlimited brood nest (no queen excluder)
- 'clean' comb (i.e. free of pesticides including acaricides)
- keep 'drone right' colonies
- no treatments (but see comments below regarding small cell)
- feed honey from a trusted source, sugar is second choice (pp. 95 & 129)
- breed locally adapted bees
- monitor as much as possible at the entrance
- minimise interrupting the colony (inspect fortnightly, p. 104)
- let nature cull weak stock, with the beekeeper's assistance if necessary
- 'regress' bees onto small cell comb (4.9 mm cells)
- brood nest spreading (p. 123; bait combs and comb shuffling advocated; but see below)
- control swarming/reproduction (pp.143 & 158)
- simple line breeding by splits from many rather than few queens (pp. 147)

For novice beekeepers, there are not many books in print which instil right from the start the principles of a more natural and sustainable way of beekeeping. Two that come to mind are Phil Chandler's *The Barefoot Beekeeper*[1] and Ross Conrad's *Natural beekeeping – organic approaches to modern apiculture*.[2] This relatively recent class of bee books, among which could be included my own – *The Bee-friendly Beekeeper*[3] – although it is not primarily aimed at beginners, shows that beekeepers are starting to think about ways of keeping bees that respect the bee's species-specific needs rather than cater for the needs of the beekeeper. But Stiglitz and Herboldsheimer set their book apart from these others by including in their method a major and somewhat controversial component, namely that of forcing bees to develop in combs with a cell size measured across the parallels of 4.9 mm (p. 125ff).

The authors hold the view that, since the days before the use of foundation, i.e. over a century ago, bees were artificially changed by rearing them on foundation with a cell size of around 5.4 mm instead of the 5.08 mm that they claim once prevailed in natural comb. They state: 'A century ago, the size of a worker cell was at most 5.08 mm...' (p. 125). But several independent investigations of the historical literature, have shown this not to be the case.[4,5,6,7] Indeed, least of all have these investigations shown that 5.08 mm is the upper limit for worker cell size. Taking all the published values up to 1900, about the time when foundation started to grow in popularity, the widest possible range for worker comb was found to be 4.92 to 5.64 mm measured between the parallel cell walls. This does not differ from the range found in natural comb today, unless the bees have been artificially shrunk or enlarged by the use of foundation.

However, we can agree with Stiglitz and Herboldsheimer that foundation has for many decades been pitched at too large a cell size, i.e. towards the worker cell size range's upper end which is commonly between 5.3 and 5.7 mm. Foundation is already an artifice. Placing it at one end of the natural worker cell size range arguably worsens the artifice. This applies whether the foundation is 5.7 mm, the size generally used in my locality, or 4.9 mm, as used by the proponents of small cell beekeeping.

Although the book claims to represent beekeeping that is 'treatment free', rather than organic or natural (p. xviii), it includes the major treatment of 'regressing' bees on small cell foundation. This is undoubtedly a treatment, for it is designed to force down the size of the bees. Just how forceful a treatment it is, can be seen from the following quotation:

> 'Even though you have given the queen no other options, she will probably be reluctant to lay in the HSC [Honey Super Cell] and it may take a few weeks before you see any sign of brood. Be patient. Eventually she will give in and lay.'

Other treatments suggested in the book are requeening, equalising colony strengths, brood spreading (pyramiding) and feeding.

But many of the authors' ideas struck me as appealing. I pick out a few for special mention:

- pulling frames and exposing them to the sun can damage the microbe balance (p. 30);
- bees draw foundation more slowly than they build natural comb (p. 48; Émile Warré also reported this);[8]
- feeding can stop interruption of brood rearing, thus preventing pathogen control (p. 88);
- disease is necessary for health; bees have 'microbial colleagues' (p. 135);
- the 'soft' Varroa treatments impact colony microbiology negatively (p. 138);
- 'bees should be allowed to structure the brood nest as they deem necessary' (p. 134).

Other parts of the book seem to contradict that last point in that brood spreading by 'pyramiding' and bait combs is advocated (pp. 99-100 & 123).

There is a factual error in the description of comb construction: "bees...use their mandibles (mouth parts) to shape the wax into perfect hexagons'. What actually happens is that the bees initially build cylindrical cells with domed bottoms and only later, by raising the temperature of the construction to semi-fluidise the wax, do the hexagons arise spontaneously.[9]

I found very few problems with the English. The following might benefit from some attention:

- 'Will bees encounter pesticides foraging in the nearby agriculture?' (p. 73)
- 'Plan to inspect your colony every two weeks or when you suspect opposite there is a problem.' (p. 104)
- 'Foundation revolutionised beekeeping by making forcing bees to produce straight, interchangeable combs.' (p. 126)
- '...we don't breed from the ones that die.' (p. 139)
- 'mpossible' (p. 139)

Although I am also in favour of the unlimited brood nest approach, and use it myself in my Warré hives, I am surprised to read that comb from unlimited brood nests, and thus comb that has cocoons in, is apparently being advocated for use as cut comb.

I feel the book is full of good ideas and certainly a bargain at the low selling price. Whilst the index looks thorough, I found it frustrating in its lack of mention of several key words, e.g. 'pyramiding', a central feature of the brood nest spreading advocated. It would have been very useful to have a full list of references to back up some of the claims made, for example the erroneous idea that bees have been artificially

enlarged. Others have criticised the paucity of illustrations. There is certainly no colour in the book, but having it would have forced up the price.

On balance, beginners will certainly learn a lot that is useful from the book. Established beekeepers might see what they are doing to their bees in a new light.

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[1] Chandler, P. J. (2007) *The Barefoot Beekeeper.* Self published, available at www.biobees.com
[2] Conrad, R. (2007) *Natural beekeeping – organic approaches to modern apiculture.* Chelsea Green Publishing, Vermont
[3] Heaf, D. (2010) *The Bee-friendly Beekeeper.* Northern Bee Books.
[4] Erickson, E. H., Lusby, D. A., Hoffman G. D. & E. W. Lusby (1990) On the size of cells. Speculations on foundation as a colony management tool. Part I. *Gleanings in Bee Culture*, Gleanings in Bee Culture 118:98-101.
[5] Zeissloff, E. (2008) Natural cell size. http://www.dheaf.plus.com/warrebeekeeping/cell_size.htm
[6] Stever, Tobias (?) Verkleinerte Bienen – Irrweg der Züchtung oder Wunderwaffe gegen Varroamilben? http://www.bienenarchiv.de/veroeffentlichungen/2003_zellengroesse/zellengroesse.htm OR http://www.franziproske.de/downloads/kleinebienengegenvarroa.pdf
[7] Liebig, G. & Aumeier, P., 2007. *Helfen kleine Zellen gegen Varroa?* Dtsch. Bienenjour. 04, 32-33
[8] Warré, É. (2010) *Beekeeping for All.* Northern Bee Books. Transl. by Heaf, D. J. & Heaf, P. A. from *L' Apiculture pour Tous* 12th edition. (Saint-Symphorien, 1948). *Beekeeping for All* is also available as a free download at www.mygarden.me.uk/beekeeping_for_all.pdf.
[9] Tautz, J. (2008) *The Buzz About Bees – Biology of a Superorganism* (Springer Verlag)