The Bee-friendly Beekeeper – Changes and additions for second printing

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Copyright page

Insert: 'Second impression with minor revisions and an addendum'

Update with printer info: 'Printed by [name & location of printer]'

Update with paper info: 'Printed on [description of the type of paper]'

page vi Contents

Correct the spacing in phrase near top of page 'Role of natural comb...'

page vii Contents

Replace 'Index' with 'Addendum' ('Addendum' now comes opposite the number '147'.)

Insert 'Index [page number for start of index]' after 'Addendum 147'

page 1

Replace 'hardly wider than a foot' with 'hardly a foot in width'

page 2

Replace 'consensus' with 'quorum'

page 3

Comma after 'inside' on 3rd line up

page 7

Figure caption, replace savethebees.com with save-bee.com

page 9

Penultimate line of 2nd paragraph: replace 'you are a' with 'your attitude is that of'

page 20

15 lines from bottom, replace 'His queens are free, if they wish, to roam the whole hive.' with 'His queens are free to roam the whole hive if they wish.'

5 lines from bottom, if replacement can be done without causing the paragraph to gain a line on page 21, replace 'provided they are broodless' with 'provided the boxes are broodless'

page 29

10th line down, insert after 'handling' and before the full stop: ' (see also comment on page 119)'

page 32

Replace 'But finding straw that is sufficiently long is becoming increasingly difficult with modern cereal breeding.' with 'But, with modern cereal breeding, it is becoming increasingly difficult to find straw that is sufficiently long.'

page 34

Change '...cluster diameter of 20-35 cm[49]' to '...cluster diameter of 20-35 cm[49] in a box measuring 37 x 47 cm.'

page 40

Last line of second paragraph: replace 'corpse removal' with 'undertaking'

page 61

Second paragraph, replace whole paragraph with: 'An advantage of the low-intervention beekeeping that is possible with the Warré hive is that it may if required be visited only twice a year. This could help towards minimising the impact of travel on the sustainability of a particular beekeeping enterprise.'

Change hyphen on 6th line up to n-rule.

page 67

Change hyphen on penultimate line of third paragraph to n-rule.

page 74

In the list, indent the continuation of paragraph lines a little; i.e. indent the lines beginning 'patches', 'quality' & 'overhairs'

page 82

Replace legend to Fig. 9.2 with: 'Exploded view of the People's Hive of Abbé Émile Warré. Note that there is an additional cloth, not visible in the photo, that serves to retain the quilt contents.'

page 92

Insert the following paragraph at the bottom of the page:

Those who are confident in finding the queen may wish to speed the transfer of the colony to the Warré hive by placing the queen in the top box of the Warré hive below a queen excluder which rests on the adapter board. Ideally, she should be placed on a piece of worker comb securely fixed to one of the central top bars so that she can resume laying immediately. Queen transfer may be safely carried out with a clip-type queen catcher. As brood hatches out of the combs in the nucleus or frame hive, they are filled with honey and the top box can be treated as a super.

page 93

Remove space after 'honey:'.

page 94

Change 'Rumania' to 'Romania'

page 96

Replace '*Impatiens glandulifera, Reynoutria japonica* and *Hedera helix*' with '*Impatiens glandulifera* (Himalayan balsam), *Reynoutria japonica* (Japanese knotweed) and *Hedera helix* (ivy)'

page 105

Last sentence; replace 'These floors are also useful when moving hives for the ventilation that they provide.' with 'These floors are also useful for the ventilation that they provide when moving hives.'

page 113

On 7th line from bottom, between '(1647-1697), ' and 'covered', insert 'instead of using top-bars, ' so that the sentence reads 'Several Warré precursors, including John Gedde (1647-1697), instead of using top-bars, covered the tops of their hive elements with a board with a hole in the middle.[232]'

page 119

Add this short paragraph to the bottom of the page:
In a revised version of the hive covering, Frères and Guillaume have substituted insulation made of biofibres, i.e. renewables, for the polystyrene.

page 122

At the end of the bottom paragraph add the following: ' (See the Addendum for an update)'

page 123

Correct the anomaly in the point size in the superscript '248' in the table.

page 126

After '...only the roof.' insert:

The quilt shown here is the same size as the box. Warré suggested making the quilt 5 mm smaller than the box to allow the hessian/burlap quilt contents retainer to be brought up the sides of the quilt and fixed there.

page 134

replace http://www.save-bee.ru/index/index/lang/en/ with http://www.save-bee.com/en/

page 136

Insert the following three entries in the glossary in the appropriate places according to alphabetical order:

Immune pathway redundancy The presence of unused but potentially usable routes or pathways at the molecular biological level for developing an immune response.

Introgression In this context refers to the movement of genes from elsewhere into the bee breed of interest.

Midrib The middle wall between the two sides of the comb forming the bases of the cells.

page 137

replace www.reineschapleau.wd1.net/articles/AV-BOTTOM%20BOARD.pdf with http://www.apinovar.com/articles/AV-BOTTOM%20BOARD.pdf

page 140

In the Mepham reference half way down: replace 'This is downloadable free as a PDF from www.foodethicscouncil.org/node/49.' with 'www.foodethicscouncil.org; PDF at http://www.dheaf.plus.com/warrebeekeeping/farming_animals_for_food_towards_a_moral_menu_fec_2001.pdf.'

page 141

Replace www.mygarden.ws/thur.pdf with www.users.callnetuk.com/~heaf/thur.pdf

page 142

Replace www.mygarden.me.uk/beekeeping_for_all.pdf with http://www.users.callnetuk.com/~heaf/beekeeping_for_all.pdf

page 143, Note 1

Replace http://www.save-bee.ru/blog/post/id/102/ with http://www.thehoneygatherers.com/html/photolibrary16.html

Note 43

Replace whole note with:

Links to videos of Georg Klindworth's Lüneberg skep beekeeping are available at http://warre.biobees.com/pressing.htm

Page 144, Note 77

Delete 'Eric Zeissloff '

Note 78

Replace www.beesource.com/pov/lusby/ with www.beesource.com/point-of-view/ed-dee-lusby/

Note 99

Replace http://www.beesource.com/pov/usda/thermology/techbulletin1429.htm with http://www.beesource.com/resources/usda/the-thermology-of-wintering-honey-bee-colonies/

Note 101

Replace

For a 2.5 hour streamed or purchasable film of Georg Klindworth's operation see http://tinyurl.com/y9276f9 or search 'Korbimkerei' at http://www.iwf.de.

with

Links to videos of Georg Klindworth's Lüneberg skep beekeeping are available at http://warre.biobees.com/pressing.htm

Page 146, Note 249

Replace http://warre.biobees.com/lifts.htm with http://warre.biobees.com/lift.htm

ADDENDUM

p. 15ff Fundamental attitudes of beekeepers

A number of conventional beekeepers have found my identification of fundamental attitudes of beekeepers somewhat offensive, and have interpreted these attitudes as characterising certain types of people. It should be noted that not only are the four attitudes presented equally justifiable ethically, but also one and the same individual may shift from one attitude to another depending on the task in hand, their circumstances and/or their degree of experience. As people are individuals, i.e. unique, and thus cannot reliably be classified into types, the categories presented are merely attitudes that can be freely adopted or not as a given individual decides.

p. 24 Retention of nest scent and heat

It has been suggested that the fact that bees do not usually seal feed holes in crown boards (inner covers) or close top entrances, where provided, refutes Thür's concept of *Nestduftwärmebindung* (retention of nest scent and heat). Whilst it is true that bees can compensate for increased heat loss ranging from that caused by the chimney effect of the two situations just mentioned to complete exposure to the weather in the case of a nest hanging in tree branches, the beekeeper may wish to minimise unnecessary loss of heat as that comes at a cost in terms of the energy, and thus nectar requirements of the colony. This is of course always to be balanced by a hive design that puts cooling the hive in hot weather within the bees capability.

p. 25 Warrés in tropical climates

The only modification for the tropics that has come to my attention so far is to increase the possibilities for cooling the hive. One user has included a mesh floor and removed the quilt altogether.

p. 32 Hybrid straw-wood circular hive

Leroy's (1946) 'mixed hive' of straw and wood overcomes the problem of achieving circularity by using straw sandwiched between two sheets of 'unrolled' poplar.

p. 40 Role of drones

A recent detailed analysis of heat production by drones showed that they contribute significantly to colony thermoregulation (Kovac *et al.* 2009). Drones produce about 1.5 times the amount of heat produced by a worker bee (Harrison 1987).

p. 41 Small cells and Varroa

For a review of all published work on the effect of small cells on Varroa reproduction up to early 2011 see Heaf (2011).

p. 42 Pesticides in foundation

Three years into a conversion to organic involving 50% annual replacement of combs with new foundation, new combs were still showing the presence of acaricides, particularly fluvalinate (Lodesani *et al.* 2008). This study illustrates how persistent the wax-soluble pesticides can be.

p. 43 Sensitivity of bees to magnetic fields

Likely receptors for magnetic fields are the superparamagnetic particles found in cells just under the cuticle of the bee abdomen (Hsu *et al.* 2007). Exposure of these particles to magnetic fields cause size changes and corresponding intracellular electrolyte flows which could trigger neural pathways. Research on bee sensitivity to magnetic fields is briefly reviewed in the same paper.

p. 58 Adaptation to local flora

A recent study in Les Landes area of France has identified an ecotype of *Apis mellifera* that has adapted its annual brood cycle to the seasonal changes in the local flora (Strange *et al.* 2009).

p. 63 Toxicity of thymol

In an extensive review of the toxicity of pesticides to honey bees, the authors warned that thymol may harm bees, despite its natural origins (Johnson *et al.* 2010).

p. 65 Breeding Varroa tolerant bees

Initiatives to produce Varroa tolerant bees have found solutions with varying degrees of success in several countries: France – John Kefuss (Kefuss *et al.* 2009); UK – Ron Hoskins; USA – Marla Spivak (Spivak & Reuter 2008) and Thomas Rinderer (Rinderer *et al.* 2010). Increasingly, commercial breeders, for example Kirk Webster, have built on these successes, and there are also many 'non treaters' who have bred from their own local survivors of Varroa and achieved winter survival rates and longevities of colonies that they find tolerable. Both Kefuss and Webster emphasise the approach that has long been a principle of organic livestock breeding, namely that it should be local and integrated with the way the livestock are managed.

p. 74-75 Trait selection versus holistic selection during breeding

One trait commonly selected for during breeding is docility. However, Wray *et al.* (2011) have shown in a study on colony personality that 'the more defensive colonies will subsequently go on to be more productive, grow larger, and have a higher likelihood of winter survival'. This finding, also noticed by others, warns us that overly focusing on individual traits might have to be paid for by a reduction in colony fitness.

p. 101 Warré colony losses

In the exceptionally hard winter of 2010/2011, my colony loss rate doubled to 60%. The causes were the unusual continuation of brood rearing into late autumn of 2010 due to the extended and productive nectar flows from Himalayan balsam and ivy, the reduced colony populations in autumn as a result of the pressure from Varroa, the consequent reduced number of winter bees, and finally the severe cold spells in November and December 2010 with temperatures down to minus eleven degrees Celsius. Emerging brood had died in their cells in most colonies that had failed, and small clusters of adult bees had chilled next to copious stores of honey. However, at the time of writing this addendum, the colony illustrated in Fig. 9.24 is in its 5th season and on warm days shows the same busy entrance traffic as shown in the figure.

p. 114 Vertical orientation of top-bars

It is still too early to report how colonies in Warrés, standard or modified, behave with vertically orientated bars. Two experiments have shown that the bees have no problems fixing combs to them. The sides of the bars tend to have most of the attached comb towards the bottom. So far, any cells there have been filled with honey. However, it would be of particular interest to know how the comb is continued between one box and the next. When this transition coincides with the brood area, it is highly unlikely that brood cells will be constructed against the sides of the bars. This could harm brood nest integrity more than having horizontal bars. There are no reports yet of Warré colonies that have moved down into a second box with vertically oriented bars.

p. 122 Removing combs on top-bars

The author finds it helpful to use a simple stand for supporting combs on top-bars when they are removed from the hive.


Warré comb being inspected by a government bee inspector. (Photo: John Haverson)

p. 122 Intensely melliferous localities

The Alberta beekeeper in question had four out of seven hives survive the 2010/2011 winter, all in good shape and with reserves of honey. In that climate the bees are confined for six months of the year and snowfalls can occur as late as June. His hives now have walls that are two inches (50 mm) thick and the internal dimensions of the boxes have been increased to 13 x 15 inches (330 x 380 mm). Instead of the Warré quilt, a top feeder is in place all the year round, filled with insulation when not used for feeding. The feeder has built into it a small top entrance to the outside. The bees, imported from New Zealand, are wintered on three boxes to ensure sufficient stores for the long winter.

Pages 137- 142

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